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THE

Introductory Diſcourſe

To the FIRST VOLUME of the

MEMOIRS

OF THE

Royal Academy of Surgery at PARIS,

Concerning the

VICES of the HUMOURS:

IN WHICH

The Doctrine of Suppuration, and various Medical and Chirurgical Subjects are conſidered, and Experiments recommended, to aſſiſt Obſervation in the Diſcovery of the NATURE, CAUSE, and CURE of DISEASES.

By M. QUESNAY, M. D.

Tranſlated and abridged, by a SURGEON.

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MDCCLX.

THE

PREFACE.

DOCTOR QUESNAY, ſecretary to the chirurgical ſociety, eſtabliſhed at Paris in the year 1731, and afterwards erected into an academy, wrote an introductory diſcourſe, that was publiſhed with the firſt volume of the Memoirs of that reſpectable body; which diſcourſe, though well received by the faculty there, was not rendered into Engliſh with them; it is therefore hoped, that this tranſlation, and

abridgment of it, will prove acceptable to the Engliſh readers, in order to make thoſe valuable Memoirs more complete and uſeful to them.

The learned and ingenious author of this diſcourſe has been thought too diffuſive in his manner of writing it, to ſhew what little dependance can be had upon reaſoning a priori for which reaſon the tranſlator has taken the liberty of ſtriking off many redundancies.

The great Mareſchal and la Peyronie, ſucceſſively ſurgeons to the king, were chiefly inſtrumental in eſtabliſhing this ſociety; and the latter of theſe celebrated men, at his death, left the greater part of a large fortune that he had honourably ac-

acquired, by his profeſſion, to carry on what he had begun, and ſtudied to promote with uncommon zeal. He directed, by his will, that a magnificent theatre, after the model of that at Paris, ſhould be built at Montpelier, in which univerſity he was educated, and gave it to the company of ſurgeons there; appointing demonſtrators of anatomy and ſurgery, with ample ſtipends. He gave the revenue of a fine eſtate to be employed in various appointments, all tending to the improvement of ſurgery, which was the main object he had always in view: and among the reſt he ordered, that the annual prize-medal of gold, granted to him who excelled in writing upon a ſubject propoſed by the ſociety, which was originally to the value of 200 livres,

livres, ſhould be advanced to 500. * This encouragement has animated learned and ingenious men, and already been the means of producing many excellent diſſertations, upon various ſubjects, relative to the healing art.

Martiniere, treading in the ſteps of his illuſtrious predeceſſors, repreſented to the king the great advantage of the ſociety to improve an art ſo beneficial to mankind; who following the example of his royal anceſtors, great patrons of arts

* Monſ. le Cat, a man of great genius and abilities, having gathered laurels enow, and carried off the prize ſeveral years ſucceſſively, the ſociety entreated him not to enter the liſts any more to the diſcouragement of other ingenious men; and, conferring ſignal honors upon him, he deſiſted.

and

and ſciences, was graciouſly pleaſed to favor this ſociety with an academic grant in the year 1748, after having been fully convinced of its utility to the public: and ſome years before, as a ſpecial inſtance of his regard to ſurgery, and the profeſſors of it, he ordered an edict ſhould be publiſhed to ſeparate the ſurgeons and barbers, who were incorporated together, commanding by it, that no ſurgeon, for the future, ſhould practiſe his art, and be maſter of his company, in Paris, till he had firſt taken a maſter of arts degree in ſome univerſity in France.

Though this example cannot be well followed here in England, yet it ſhould lead thoſe who intend bringing

bringing up their children in ſurgery, to give them as much preparatory education, as if they deſigned them for the univerſity. The French tongue, the mathematics, eſpecially mechanics, drawing and ſtenography, if not abſolutely neceſſary, are very uſeful accompliſhments for a ſurgeon; and they will certainly be found ſo upon many occaſions, in the purſuit of his ſtudies; a competent knowledge of which may be eaſily obtained, by an early and proper application.

Thoſe of a ſuitable genius and thus qualified, who ſhall be put apprentices, even in the country, to able and inſtructive maſters, afterwards attending aſſiduouſly in London, to anatomy, ſurgery, experimental

mental philoſophy, &c. may become ornaments in their profeſſion; may be enabled by theſe means to expreſs and conduct themſelves in ſuch a manner, as will effectually recommend them to the world, and ſupport the character and dignity of an art that has been highly honoured in all ages.

Yet, from a variety of unavoidable accidents attending the very nature of the profeſſion, our reputation ſtands upon ſlippery ground; we are the more liable to cenſure as the generality of people determine from events, and the only, or moſt capable judges not being always diſpoſed to judge us fairly; but no man can be ignorant of the happy conſequences of mutual friendſhip and benevolence;

lence; for as candor in the faculty in general would prove a great ſecurity to the reputation of each individual, ſo a communicative and ingenuous diſpoſition of mind ſhown upon every occaſion, would greatly promote the intereſt of the profeſſion itſelf.

As the ſymptoms of latent diſeaſes are often very equivocal, the diligent obſervance and minuting of them down before the death of the patient, and the accurate inſpection of the body after, might greatly improve the diagnoſtic and prognoſtic part of the medical art: and, in proceſs of time, by theſe meaſures, perhaps better criterions might be eſtabliſhed to direct the judgment in the curative indications; or when

it happens that the diſeaſe is incurable in its nature, it is not a little to the honor of the phyſician or ſurgeon to be able to preſage the event of it; opportunities however of making remarks and obſervations, in this uſeful and inſtructive manner, can ſeldom be had but in hoſpitals.

VICES

VICES
OF THE
HUMOURS.

THE doctrine of ſuppuration appeared to me a ſubject of great extent, when I at firſt propoſed to make inquiry into it. The cauſes and effects, the kinds and various complicated ſtates of ſuppuration, with the indications they offer to direct our practice, ſeem to compriſe almoſt all the neceſſary knowledge in the cure of diſeaſes: but this ſubject now requires to be farther conſidered and illuſtrated, as the hypotheſes that have been advanced, for a century paſt, have involved the theory of our art in obſcurity, and made it abound in chimerical and erroneous opinions; therefore we ſhall endeavour to eſtabliſh it upon a better foundation.

The firſt ſtep towards effecting this important point, is to examine into the various depravations, which may happen in our fluids; for 'tis only by a knowledge of their different morbid ſtates, that we can diſcover the qualities of the matter produced by ſuppuration, and here indeed lie the moſt hidden myſteries of the medical art, of which our ſenſes are capable to take but a very ſuperficial cogniſance. The ancients, who ſtudied nature entirely by obſervation, could form their judgment only from external appearances. It is by experimental philoſophy alone we can expect to make diſcoveries of the ſecret cauſes which act internally in bodies, with any degree of certainty: that furniſhes us with a multitude of unqueſtionable facts, which, when joined to the knowledge acquired by obſervation, may produce ſome truths to illuſtrate the ſubjects coming under conſideration.

Theſe truths are very extenſive, but they form only general principles, which are neceſſary to be underſtood in treating the different ſubjects we deſign to apply them to.

We

We ſhall divide this eſſay into three parts.

In the firſt, we ſhall ſpeak of the impurity of the humours, or their mixture with heterogeneous matter, that may vitiate them; by which we don't flatter ourſelves that we ſhall be able to diffuſe much light upon the ſubject, yet this firſt part will not be uſeleſs, becauſe we ſhall evidently ſhow the ſource of errors, that is of conſequence to be expoſed to view, in order to inſpire our readers with the diſtruſt they ought to have of vain ſpeculations, works of the imagination of thoſe phyſicians, who have undertaken to explain things inexplicable, and infected the theory of our art with their whimſical productions. In expoſing the error and vanity of theſe ſpeculations, we ſhall clearly ſhow the bounds which ſhould be ſet to our underſtandings and inquiries. Reaſon may convince us, that our attempts to ſearch too nicely into the humoral cauſe of diſeaſes, will ſerve only to lead us into darkneſs, in which it will entirely eſcape our penetration.

In the ſecond, we ſhall treat of the depravations that our humours are ſuſceptible

of ſpontaneouſly. This part will be more inſtructive than the firſt, becauſe, with the aſſiſtance of many facts drawn from experiments, we may diſcover the characters, the immediate cauſes and the effects of theſe depravations, and diſtinguiſh what humours are more or leſs ſuſceptible of ſuch alterations.

In the third, we ſhall examine into the imperfections and the different ſtates of crudity in the humors, through a defect of the organs appointed to prepare them; in which we ſhall alſo inquire into the different kinds of perverſion the fluids ſuffer by an exceſs or defect of elaſticity in the ſolids; and conclude with a recapitulation of the various kinds of acrimony our juices may acquire from thoſe cauſes. We ſhall not here expatiate upon theſe acrimonies, though they ſeem to be the immediate cauſe of almoſt all the diſorders that vitiated humours occaſion in the Animal Oeconomy. Their characters, their kinds and their effects will be ſpecified, when we examine what they depend upon: But in the firſt part, we ſhall only collect the different kinds of acrimony, and range them in their natural order to ſhew them in one view.

PART

PART I.

Of the IMPURITY of the HUMORS.

THE divers kinds of noxious matter, which mix with our blood and humours, are true humoral cauſes. What humoral cauſes are.

The vices in the blood and humors, cauſed by an inteſtine motion, do not happen, or but very imperfectly, whilſt circulating in their veſſels. That kind of depravation which conſiſts in the ſpontaneous motions of putrefaction and fermentation, poſſeſſes thoſe humors only which are out of the bounds of circulation; and if after ſuch depravation, they return into the maſs of blood and infect it, they muſt be looked upon as humoral cauſes.

When theſe putrid, or fermented juices, have their reſidence in an abſceſs, or in an extravaſation of blood, they may be conſidered as local humoral cauſes; but

the queſtion here is not concerning them; for when we ſpeak of humoral cauſes without ſpecifying their qualities, we would be underſtood to mean, ſuch as proceed from the effluvia of putrid, infectious ſubſtances paſſing into the blood.

Our humors may alſo be vitiated two ways different from the former, by being either too much or too little elaborated by the organic powers; if they are too little it is to be conſidered only as an imperfection, the exiſtence and duration of which depend entirely upon the lax ſtate of the ſolids, to which we muſt attend, and not look upon it as a true humoral cauſe.

By the exceſs of the organic powers our humors may undergo an alteration, and the ſecretories and excretories be rendered unfit to perform regularly their reſpective functions. In each of theſe caſes the humors which are perverted, or which cannot be ſeparated and expelled, may properly enough be looked upon as humoral cauſes, whilſt they remain in the maſs of blood and produce diſeaſes.

Hence we may infer, that impurities mixing with the blood, furniſh the matter of humoral cauſes, by which the fluids may become affected, and then make ſuch an impreſſion upon the ſolids, as will bring them into a morbid ſtate.

According to this expoſition it plainly appears, that theſe impurities proceed in general from two diſtinct ſources; for, though ſome may enter into the blood from without, yet others may be generated within the body, and after being retained for ſome time in the courſe of the circulation, be then depoſited in ſome part, and afterwards return into the blood.

Among thoſe which enter from without, are the effluvia proceeding from different kinds of putrid ſubſtances, conveyed into the body by the air, as the vehicle of them, and ſuch eſpecially as are conveyed by the mouth into the ſtomach, and from thence with the chyle into the blood; for it is not ſo probable, that what we take in by inſpiration ſhould penetrate the ways of circulation and infect our fluids. Some we ſwallow with our aliment; ſome

are introduced by accidental openings, as by bites of venomous creatures, or by wounds made with poiſonous weapons; and others are communicated by contact of malignant ſubſtances; for we find there are malignant ſubſtances which being touched penetrate inſenſibly. Grundelius ſays, he ſaw ſome perſons, who fell into dreadful ſyncopes by only holding Wolf's Bane in their hands; and that he cured them with Goat's Milk.

Impurities that infect our blood, are bred in us from whatever corrupts or ferments in the firſt paſſages; from an exceſs in the action of the ſolids, producing purulent matter, &c. as in fevers, and from a retention of excrementitious matter.

Theſe different ſources of impurities enable us ſometimes to diſcover the nature of the morbific matter; though we are too often left to diſtinguiſh it by its effects. If the plague breaks out in a country, viſibly infected with putrid ſubſtances, is it not reaſonable to attribute it to peſtiferous effluvia floating in the air? If

a diſeaſe happens in conſequence of indigeſtion, ought we not to preſume that it is cauſed by vitiated juices, paſſing with the chyle into the blood? If we are certain that a perſon with a ſlow fever has an internal ulcer, can we doubt of the fever being kept up by the reflux of purulent matter? If a lethargy follows a ſuppreſſion of urine of many days duration, can we heſitate to pronounce its ariſing from the retained excrement? And, don't we immediately conclude that the yellowneſs of the urine and ſkin in the jaundice proceeds from a retention of bile?

Theſe are ſome of the diſeaſes in which the original cauſes diſcover themſelves, and from whence we draw rational concluſions to direct our practice. Our finite underſtandings can carry us but very little farther, in the diſcovery of humoral cauſes; for whatever other diſcoveries we make upon ſuch cauſes, are from their ſenſible effects, produced in a manner generally beyond our penetration; diſcoveries that can be made only by obſervation and experience, in which the beſt reaſoning

ing can afford but little aſſiſtance. We can't be too fully poſſeſſed of this great and important truth, to prevent our being deluded by fine and ingenious ſpeculations upon this ſubject, and having our minds filled with ſuch falſe notions as will infallibly bewilder us in practice.

In order to guard our pupils againſt falling inadvertently into errors, we are going to ſhow, that the nature and action of theſe cauſes are not to be explained; that obſervation and experience are the ſureſt guides to direct us in the cure of diſeaſes; that the ancient Phyſicians and Surgeons were of that opinion, in general, till the laſt age, and that the * moderns have been authors of frivolous and ridiculous notions.

* We mean ſuch as have amuſed the world with hypotheſes without having premiſed ſufficient data.

SECT. I.

The Nature and Action of the humoral Cauſes are inexplicable.

WE have already remarked, that when the impurities of the humors are derived from a perceptible ſource, or that they are diſcovered by ſome effect peculiar to them, we may know the cauſes and diſtinguiſh the one from the other; but theſe caſes are rare in compariſon to thoſe in which the ſource and intromiſſion of the impurities are imperceptible, and the effects they produce common to many cauſes. Under theſe perplexing circumſtances, wiſe and prudent men will act with the utmoſt caution and circumſpection, as, at beſt, their judgment can be founded only upon rational conjectures. For example; nothing is more common than to ſee a deficiency of perſpiration, a bilious humor, depraved humours in the primæ viæ, acid or acrid lymph, &c. taken indiſcriminately for the cauſe of the diſeaſe, when there is no certain evidence, which to accuſe of it.

The obſcurity of humoral cauſes.

Not

Not only many different cauſes may produce apparently the ſame diſeaſe; but many diſeaſes very different, may ariſe from the ſame cauſe, whilſt we are intirely ignorant of this pernicious fecundity. This diſguiſe of one and the ſame cauſe under different effects or diſeaſes, wants no proof: practitioners obſerve it too frequently; but we'll give a ſingle inſtance that manifeſtly ſhows it. * A woman becoming irregular in her menſtruation, grew hyſterical and had violent palpitations of her heart; eruptions breaking out near her ears, carried off the other complaints; the eruptions vaniſhing upon ſome injudicious application, a gangrene ſoon after ſeized her legs, and killed her.

When we ſee what is called morbific or purulent matter, or a putrid body from whence noxious effluvia ariſe, can the moſt piercing eye diſcern the malignant corpuſcles reſiding in them?

I confeſs we may ſometimes diſcover by experiments, whether theſe corpuſcles be compoſed of acid or alcaline ſalts; but

* Nouvelle claſſe des maladies pag. 281.

they

they conduct us no farther than to the agents, of which we only know their name, and to cauſes which diſtinguiſh themſelves only by their effects; for the mechanical operation of them we cannot comprehend.

I believe we may reaſonably ſuppoſe; that the greater part of acute diſeaſes are cauſed by ſalts of the alcaline kind, either eſſential or volatile, proceeding from animal or vegetable ſubſtances, become more or leſs alcaline; but we have no certain criterion to ſhow in what the different ſtate of alcalization conſiſts; we can judge of it only by the ſenſible effects of theſe ſalts.

It can hardly be imagined that conſiderate men ſhould yield their aſſent to ſuch abſurd notions, as have prevailed concerning acid and alcali; we are indeed taught by experience, that acid and alcaline ſalts have oppoſite qualities, yet our ſhort-ſighted reaſon will not inform us how they may act upon each other, ſo as to become reciprocally correctors in the different diſeaſes they produce. The ac-

tion of the alcaline ſalts is neither ſimple nor uniform; for it ſometimes accelerates and ſometimes deſtroys the motion of our organs. The matter which theſe ſalts proceed from, and the degree of depravation of that matter, with other circumſtances concurring, may occaſion the extreme diverſity of their effects. The ableſt philoſophers have ſuppoſed, that theſe ſalts are actuated by an igneous matter, or that they are armed with points, which irritate and tear the ſolid parts; but as we have obſerved they affect the body ſo variably, and produce ſuch contrary effects, we cannot help ſuſpecting, that the ideas they have conceived of their modes of action, are little better than productions of fertile imaginations.

With our limited and imperfect knowledge of humoral cauſes, how ſhould we explain the nature and manner of their action in producing diſeaſes? Who will undertake to ſhew the reaſon why an alcali accelerates the vibratory motion of the ſolids, when an acid, which is as pungent, retards it? Let us not attempt the ſolution of ſuch difficult queſtions as

theſe; for how matter acts upon matter, in our bodies, is a problem I am afraid will never be ſolved. We ſee one kind of noxious matter irritates the arterial ſyſtem and produces fevers or inflammations, or extinguiſhes the principle of action of the veſſels, and cauſes a gangrene. Another excites in the nervous ſyſtem, convulſive diſorders. Another occaſions intolerable pain, without the part appearing, upon opening it, affected with any diſeaſe. Very obſtinate and painful colics raged laſt year, in the hoſpital at Verſailles, of which a great many died, yet upon accurate inſpection, after death, we could not trace any effects of this cruel diſeaſe, in the parts that had ſuffered. Another kind of matter excites heat in a mortifying part, although the part ſeems cold to the touch. Another deſtroys a part without any other ſenſation than a little coldneſs. Another produces complicated effects. There is a caſe in the German Ephem. of a man who was awakened with a pain in his thigh, as if he had received a violent blow upon the part, which continued without abate-

A particular kind of colic in the hoſpital at Verſailles.

ment

ment from any application, till his death, after which the thigh was opened and the fleſh found ſeparated from the bone. By what means are theſe pernicious cauſes confined from action in the body, without producing any apparent diſorder, before they declare themſelves by ſuch ſudden and terrible devaſtations? Epidemic diſeaſes ſhow that theſe cauſes, at particular ſeaſons, are determined to particular parts; as the head, the lungs, the inteſtines, &c. The various combinations of theſe cauſes and the difference of temperaments, ages, and other circumſtances, may produce a great variety of appearances. It would be an argument of great raſhneſs to endeavour to account for the effects of theſe inviſible agents, theſe imperceptible atoms; and we muſt not flatter ourſelves with expectations of more ſucceſs, in our attempts to diſcover the properties of medicines, which are as impenetrable. In ſhort, a phyſician or a ſurgeon prejudiced in favour of imaginary ſpeculations, is not qualified to exerciſe the healing art, in which error is attended with ſuch fatal conſequences.

This

This expoſition upon the effects of the impurities of our humours may be ſufficient to convince thoſe, who conſider the extent of our underſtanding, that theſe cauſes are covered with thick darkneſs, which cannot be diſpelled, and that there is nothing more deluſive in phyſic and ſurgery, than the pretended explanations of the moderns concerning the nature and action of the humoral cauſes. There are effects ſtill more ſurprizing, from matter acting upon the vital principle, and even upon the faculties of the ſoul; of which, poiſons and venoms every day furniſh us with examples to raiſe our admiration. A perſon bit by a Viper falls into a languor; another bit by a mad animal becomes mad. Henbane and Nightſhade produce madneſs; ſometimes raving, and ſometimes melancholy: the bite of the Tarantula produces a kind of madneſs, which is cured by muſic and dancing; but it ſometimes returns periodically every year. Can any perſon rationally propoſe to explain the nature of theſe accidents? The cauſes, and the conſtruction of the organs upon which

they act, entirely eſcape our ſenſes. Theſe effects are indeed prodigies, which confound and over-come the imagination, and appear myſterious and wonderful to the moſt penetrating genius.

SECT.

SECT. II.

It is by Obſervation and Experience we muſt expect to diſcover Medicines to be depended upon in the Cure of Diſeaſes.

IN order to comprehend more clearly this material point, we muſt carefully diſtinguiſh the humoral or efficient cauſe of the diſeaſe from the diſeaſe itſelf; for we are apt to confound the one with the other: and we muſt content ourſelves with anſwering certain indications, which the efficient cauſe or its effect, ſometimes termed the formal cauſe, ſenſibly produces: but if we carefully attend to theſe two cauſes, we ſhall evidently ſee, that the indications, which reaſon directs us to follow, in the cure of diſeaſes, are ſeldom taken from the efficient cauſe. * For example; the indications we take from the ſtrength and quickneſs of the pulſe, which direct us to weaken and moderate the too violent vibration of the veſſels in

We often attack only the diſeaſe when we imagine that we attack the cauſe of it.

* L' Art de guerir par la Saignée part 3.

fevers, are not induced from the cauſe that excites this exceſs of motion. Thoſe taken from the contraction of the capillary arteries in inflammations; the irritation of the nerves in convulſive affections; the interrupted motion of the animal ſpirits in ſyncopes, are not derived from the reſpective cauſes of theſe diſeaſes to direct us to humecting, antiſpaſmodic, or cordial medicines; the nature of which is as much involved in obſcurity as their cauſes.

The cure of diſeaſes depending upon humoral cauſes, limited to obſervation and experience.

As we are very ignorant of the modus operandi of medicines, and the nature of matter productive of diſeaſes; we muſt keep to diligent and accurate obſervation and experience to inform our judgment and regulate our practice. Could reaſon indeed open to our view the peccant matter, and point out to us remedies that would exhauſt it, or deſtroy its active principles, then the cure of diſeaſes would be certain and eaſily effected.

There are indeed ſome diſeaſes depending upon humoral cauſes, in which rational methods of cure may be followed; but,

but, even in them, the indications are generally taken from the effect and not from the cauſe.

A fever and an inflammation may be conſidered as diſeaſes of this claſs; but can a phyſician ſtop a continual fever when he pleaſes? Or a ſurgeon cure an inflammation, with any tolerable degree of certainty, when it depends upon an internal cauſe?

If we take a view of medicines uſed in other diſeaſes, we ſhall find ourſelves more indebted to pure chance, or obſervation and experience, for the diſcovery of efficacious remedies, than to reaſoning only.

Thoſe who are prejudiced in favour of purgatives, cannot be certain that they are truly indicated, unleſs nature has firſt ſhewn the propriety of ſuch evacuants, by a tendency to throw off the morbific matter by the inteſtinal glands.

The unſucceſsful attempts that have, in all ages, been made to purify the humours

evidently prove, that it is a point not eaſily gained. When, deluded by erroneous conjectures, we have recourſe to purgatives or depuratives, experience frequently diſcovers our error and effectually convinces us, that by our imperfect knowledge we cannot comprehend either the poſſibility or impoſſibility of evacuating theſe vitiated humours, or of purifying the maſs of blood.

We are no leſs embarraſſed concerning the ways we ſhould chooſe to evacuate theſe impurities; if experience has not manifeſtly determined the choice; for ſome give the preference to ſudorifics; others to purgatives; others to diuretics; and ſometimes ſetons or fontanels are tried, in order to procure a diſcharge of that offending matter externally, which cannot find a paſſage through any ſecretory organ.

Wealſo meet with great difficulties in determining the proper time to make uſe of evacuants. The moſt judicious practitioners, who moſt attentively watch the

ſteps

ſteps of nature, are often at a loſs in this point of practice; but evacuants are generally found to be prejudicial, if they are uſed before nature has made the morbid matter fit to paſs the proper ſecretories.

Although depuration appears ſuch a ready and general method to exhauſt theſe cauſes, and at firſt ſight ſeems conformable to reaſon, and eaſy to be effected, yet obſervation and experience ſhew us, it is to be done only in ſome caſes, at certain times, and by ſome particular excretories.

We may entertain the ſame idea of a perſon affected by an humoural cauſe as of one poiſoned, ſeeing it creates great diſorder in the whole animal œconomy, producing fevers, inflammations, convulſions, deliriums, ulcers, pains, gangrenes, &c. and acts like what goes under the determinate name of poiſon; for the particles of both have a form or configuration which renders them incompatible to our organic parts, by irritating, and injuring them various ways; againſt which

we have equal want of counter-poiſons or antidotes: yet obſervation and experience, moſt to be depended upon in making diſcoveries, have brought but very few to light.

Antidotes rarely diſcovered.

Antidotes differ from ſpecifics.

We muſt not confound ſpecific remedies againſt diſeaſes, with thoſe that attack the cauſe, which properly go under the denomination of antidotes: for it is probable that internal medicines oftener produce their effects by directing their action more immediately on the ſolids than on the fluids.

We can diſcover very little by examining into the nature of the few ſpecifics we have; and as to what are called true antidotes, we are unacquainted with their manner of acting. We cannot be aſſured that the bark in intermittents, ſcurvy-graſs in the ſcurvy, ipecacuanha in the dyſentery, do not firſt act upon the ſolids, and then upon the fluids by reaction. Mercury ſeems almoſt the only remedy that merits the title of antidote. The virus of the venereal diſeaſe cauſes in the fluids

fluids and ſolids, ſuch various and dreadful diſorders; that each of them would offer particular indications to be attended to, did not this remedy alone ſucceſsfully attack the original cauſe common to all of them.

Injection of medicines into the veins.

Obſervations made upon the injection of medicines into the veins, might probably have diſcovered ſome potent antidotes. Many experiments of this kind were made, and began to flatter our hopes; but ſome people, haſtily and inconſiderately ſuggeſting the danger of them, deterred others from the practice, which was ſoon laid aſide, owing to ſuch diſcouragements.

SECT.

SECT. III.

The Ancients never undertook to explain the Nature of the humoral cauſes; and the Moderns have been Authors of abſurd Opinions upon the Subject.

The ancients took the moſt prudent ſteps in treating diſeaſes.

THE methods founded by the ancients upon obſervation and experience, were better calculated and leſs dangerous than the pretended rational ones contrived by the moderns, to oppoſe theſe cauſes. Men, more ingenious than judicious, have invented divers ſyſtems to explain the cauſes and their effects: and their pretended explanations have been regarded as making a great progreſs and improvement in the medical art.

hy the eory of e moerns is be ſuſected.

The conduct of the ancient phyſicians was very oppoſite to that of the modern; the latter have contrived ſyſtems, and imagined, that with reaſon and reflection, they might diſcover the moſt concealed phyſical cauſes and operations of nature.

In

In this opinion they have taken appearances and probabilities for realities, and produced theories upon ſpeculative plans, that cannot be too ſoon exploded.

The ancients made reaſon yield to obſervation and experience.

The ancients on the contrary ſtudied nature herſelf, and eſtabliſhed principles to be depended upon in practice; though a clear doctrine could not be deduced from them; but theſe great men endeavoured to ſupply that defect, by their conjectures; for they apprehended, that they might attribute to the firſt general and ſenſible cauſes, all the effects which appeared relative to them. Theſe attempts indeed often ſucceeded but very indifferently, but they always made them ſubordinate to the knowledge they acquired by obſervation.

Why the theory of the ancients was full of errors.

The errors they may be reproached with are almoſt unavoidable, for in an imperfect ſtate of the ſciences, they could not find the limits of the truths they had diſcovered; but theſe errors when oppoſed by matters of fact, do not deſtroy the foundation of their knowledge; they are only confined to a ſupplemental part of their doctrine, that appeared to them very ob-

obſcurely. We ought alſo to obſerve, that they have not referred to the firſt cauſes, which ſerve as a foundation to their theory, all the phænomena they took notice of; for they acknowledged themſelves ignorant of many, thinking they depended on ſome other cauſes.

The philoſophy of the ancients did notextend to humoral cauſes.

Their philoſophy having for its object only what comes under the evidence of the ſenſes, they were not influenced by hidden cauſes; perſuaded therefore that their reaſon could not penetrate ſo far, they ſtopped at their effects, without ſearching after heterogeneous matter, or what is here termed the humoral cauſe; which, if they happened to diſcover by its effects, when mixt with the maſs of blood, it was only by obſerving the dryneſs or moiſture, heat or cold it cauſed in the body. The two laſt; according to them were the only active qualities; and they conſidered the various kinds of noxious matter, only as being capable of producing either too great a degree of heat or cold, or too quick or ſlow vibration of the veſſels.

It is true indeed, that the ancients were not well acquainted with the action of these causes upon the arteries, yet they have not confounded the two kinds of heat found in animal bodies: but distinguished the one by the name of natural and the other, of adventitious heat. These denominations alone sufficiently shew, that they knew these two kinds of heat did not depend upon the same cause, and that they produced different effects. We find in their writings enough to convince us, that observation has directed them by these effects to more extensive and exact knowledge, than what the moderns can pretend to boast of from their hypotheses and reasonings à priori. Fermentation and coagulation of the blood and humours, which the latter attribute to acid and alcali sufficiently testify, as we shall fully prove afterwards, that upon the action of the humoral causes they have given us explanations not to be relied upon, and falsehoods for facts the most decisive.

The ancients distinguished between natural and adventitious heat.

The ancients certainly had no clear ideas of heat and cold, which they have ad-

The ancients knew that heat

confiſted in motion.

admitted as firſt cauſes; but have we much ſurpaſſed them in the diſcoveries we have made upon the nature of theſe qualities? It admits of no diſpute, that the moderns have evidently proved, that heat conſiſts in the agitation of bodies; but could the ancients look upon heat as an active quality, which ſeparates and agitates the parts of bodies, without aſcribing the action or motion to it? It is needleſs here to enter upon an interpretation of their doctrine concerning heat, to ſhew preciſely in what they make the activity of it conſiſt; but tis evident, they often uſed the word motion and meant heat by it, conſequently were not entirely ignorant of the eſſence of it, though they delivered themſelves obſcurely.

The opinion of the ancients upon cold.

Cold appeared to them a very powerful principle, in contracting and keeping together the different elements of which bodies are compoſed: and they thought that the life and duration of bodies depended upon a reciprocal oppoſition and reſiſtance between heat and cold. The moderns conſider this latter quality only

The moderns look upon cold

as a paſſive ſtate or ſimple privation of motion; and, that perfect cold, if there be any ſuch thing, is only perfect reſt in bodies; therefore, according to their doctrine, the more the parts are at reſt the colder is the body. This opinion is not to be defended, as I have ſhewn in another place, where I have particularly conſidered the ancient and modern philoſophy, concerning the nature of fire, heat, cold, &c. *

as a privation of motion.

The ancients have added to theſe two qualities, dryneſs and moiſture, which, according to them, give the proper conſiſtence to every body; but they conſidered them only as paſſive qualities, ſubject in various manners to the actions of heat and cold; therefore, ſtrictly ſpeaking, the ancient phyſicians admitted of only the latter, as general primitive cauſes of effects upon bodies.

The notion the ancients had of dryneſs and moiſture.

It was to the obſervance of theſe four qualities the ancients reduced the cure of

The philoſophy of the anci-

* Eſſai ſur l' œconomie animale.

diſea-

ent phyſicians confined to heat, cold, dryneſs, and moiſture.

diſeaſes. They plainly ſaw that things cooling or heating, to exceſs, cauſed diſeaſes and death; and obſerved the effects of dryneſs and moiſture; to the firſt they aſcribed too much conſiſtency in the fluids, and rigidity in the ſolids; and to the other, as much diſſolution and laxity.

The manifeſt qualities of the ancients.

From theſe manifeſt qualities obſerved in the body, they took their indications, which directed them to hot or cold remedies: and when there were any extraordinary tumults raiſed in the animal œconomy, which they could not reconcile with theſe qualities, they attributed them to a putrefactive ſtate of the humours produced by adventitious heat, and, ingenuouſly confeſſing their ignorance, called them occult qualities.

What the ancients meant by occult qualities.

Hence 'tis evident, that they never undertook to explain the nature or operation of the humoral cauſes of diſeaſes, but confined themſelves to ſenſible effects.

The authors of hypothetical ſyſtems have thought themſelves more knowing upon

upon this ſubject; but conſult their writings and you'll find theſe cauſes examined, the veil removed, their form, their modes of action, and the proper remedies diſcovered, as the authors tell you; ſtill compare their books and you'll ſee explanations contradicted, diſputes founded upon prejudice, uncertain opinions and raſh methods of practice, appearing to proceed rather from ſpeculative refinements than inquiries directed by reaſon to aſſiſt nature. The bad ſucceſs of ſo many attempts which has produced confuſion and perplexity in the medical art, joined to the wiſe conſtraint that prevented the ancient phyſicians from running into many errors, might be ſufficient, independent of the convincing proofs we have been giving a detail of, to perſuade us, that 'tis impoſſible to know the different kinds of noxious matter that mix with our fluids, to explain their various manners of acting, and to find rational indications how to reſiſt them.

PART II.

Concerning the DEPRAVATION of which the HUMOURS are ſuſceptible in themſelves.

Our humours apt to fall into ſpontaneous motion.

WHEN the humours ſtagnate out of the bounds of circulation, in general, they ſoon fall into ſpontaneous motions, corrupt, and become injurious to the animal œconomy.

What fermentation is.

Theſe motions found in our humours are fermentation and putrefaction. By fermentation we mean an inteſtine motion, which naturally happens to animal or vegetable juices: and according to their nature and circumſtances, it renders them viſcous, acid or rancid.

The idea of it is not enough limited; for heat and ebullition of liquors, and the

efferveſcence ariſing from divers mixtures; as lime and water; an acid with an alcali, &c. all go under the ſame denomination; we ſhall therefore confine ourſelves to the above definition.

What putrefaction is.

Putrefaction is alſo an inteſtine motion, that moſt juices are ſuſceptible of, but more eſpecially thoſe of animals, which renders them extremely fetid, changes their eſſential into a volatile, alcaline ſalt, and, by diſuniting the earthy from the other elementary parts, brings them into a ſtate of diſſolution.

We muſt be cautious leſt we confound fermentation with putrefaction.

Some have confounded theſe two kinds of ſpontaneous motion together, looking upon fermentation to be the beginning of putrefaction. The corruption of the fleſh of animals, eſpecially of thoſe that live upon vegetable food, begins with a kind of fermentation perceptible by an acid ſmell, ſoon ſucceeded by a cadaverous one, which ſudden tranſition might eaſily lead them into the miſtake; but when conſidered a little farther, they will appear very

ry different in their natures, from conſider-
ing their effects and the matter that is ſub-
ject to ſuch changes; for what contains an
alcaline ſalt, will admit only of putrefac-
tion, and what has an acid ſalt in it's com-
poſition, only of fermentation.

SECT. I.

The Effect of ſpontaneous Motions which one Body produces upon another, may be reduced to theſe three Heads, Contagion, Malignity and Infection.

The phyſical ſenſes of the word contagion.

THE name of contagion has two ſignifications in phyſic. We underſtand by the firſt, a communication of a diſeaſe from one perſon to another; as the ſmall-pox, &c. and by the ſecond is meant a communication of ſpontaneous motion by any putrid matter, which may produce diſeaſes.

Upon malignityand infection.

We ſhall here treat of malignity and infection, and ſhew in what reſpects they differ from contagion, beginning with thoſe that depend upon putrefaction, then proceed to thoſe which depend upon fermentation: and to illuſtrate this point ſtill farther, conſider their effects under both circumſtances.

Con-

Contagion from ſpontaneous motions, we have ſhewn to be a communication of them to other bodies; but malignity muſt be conſidered as a quality productive of many other evils.

The principal effects of it cauſed by putrid matter introduced into the blood, are, convulſions, ardent fevers, inflammations of the worſt kind, as the anthrax, carbuncle, &c. Theſe effects are indeed very formidable, but there is another ſtill more dreadful, proceeding from the moſt ſubtle effluvia of putrid bodies, which extinguiſhes the vital flame in an inſtant, and moſt conſpicuouſly diſtinguiſhes malignity from infection *. Ambroſe Parey relates of himſelf, that, having had the plague, he attended a perſon ſick of it, and upon opening the bed to dreſs a bubo and two carbuncles, was ſtruck, with ſuch a ſtench, that he fell down, deprived of ſenſe and motion, and laid ſome time as if he had been dead. Effects of malignity.

* Boneti Sepulchret. Sect. 10.

When putrid particles, of a malignant quality, get into the blood, they do not appear to act directly or immediately upon the ſolids; though in ſome inſtances, they ſoon produce violent ſymptoms of malignity upon them.

Bodies from which the moſt deleterious effluvia proceed; when grown dry are inoffenſive; and liquors containing putrid particles, by being long expoſed to the air, become vapid. In the German Ephem. is recorded this remarkable fact. A corpſe, remaining long unburied, ſtood in the coffin upon a tub whence a liquor ran, which a poor woman, after interment of the body, drank a draught of, taking it for whey, without finding any ill conſequence.

Infection cauſed by putrid Matter.

The term infection has alſo two ſignications in phyſic. It is often uſed to expreſs the communication of a diſeaſe from one living body to another, in the ſame ſenſe as the firſt kind of contagion we men-

mentioned; but we would be underſtood to mean by it, the communication of a diſeaſe, from vitiated matter, introduced into the blood by effluvia, diffuſed in the air, or through ſome other means, which is different, in ſome meaſures, from contagion, according to the definition before given of it. It differs alſo from malignity, which, without infecting the fluids, ſometimes acts immediately upon the vital principle, by externally affecting the nervous ſyſtem. For theſe reaſons we muſt be cautious, leſt we confound infection, contagion and malignity one with the other.

Effects of infection.

Although infection, or impurity of the humours, cauſed by putrid matter is different from contagion and malignity in general, yet its effects have ſome affinity with both, ſeparately or conjunctly.

Sometimes infection produces contagious effects.

The putrid matter, which infects the maſs of blood, ſometimes acts only upon the fluids, and by contagion alone, cauſing a colliquation of them, which often manifeſts itſelf in exceſſive evacuations by ſtool or by ſweat; but they are commonly

monly made without ſtimulating the ſecretories much more than naturally, or injuring the body only by the loſs of nutritious juices, occaſioning weakneſs.

Sometimes infection produces malignant effects.

At other times this infection ſeems to be attended with no other conſequences than what we obſerve in malignity.

Infection has ſometimes contagious and malignant appearances conjunctly.

In ſome caſes it aſſumes the appearances of contagion and malignity in conjunction; by attacking the nervous ſyſtem and perverting the fluids, as is evident in peſtilential fevers, the ſmall-pox, &c. in which malignity ſhews itſelf very early, by the moſt dreadful ſymptoms; and putrefaction makes ſuch a ſwift progreſs, that bodies dying of theſe diſeaſes, ſometimes contract, in a few hours, an intolerable ſtench.

Cauſes of the variety of effects of infection.

The degree of putrefaction of the matter, the different humours infected, and other circumſtances, concur to the production of this variety of effects. Matter retained a long time in an abſceſs, ſometimes acquires ſuch a malignant quality,

as

as to attack the vital powers, and vanquiſh them. Extravaſated blood become putrid, is attended with bad conſequences. Lymph as we ſhall ſee afterwards, obtains by putrefaction, a peculiar malignity, which often degenerates into a corroſive or cancerous virus. The adipoſe juices move ſlowly to a putrefactive ſtate. Perſpirable matter contracts different degrees of malignity, as we ſee in various cutaneous diſeaſes. The juices which are changed into a virus, in the venereal diſeaſe, repreſent to us a diſmal example of the variety of ſhapes that putrefaction appears in; for the ſymptoms of that diſeaſe reſemble many other diſeaſes.

By a little attention we may ſee upon what the great diverſity of effects cauſed by putrid matter depends, and reaſonably conclude, that putrefaction furniſhes the greater part of the humoral cauſes of diſeaſes, as hinted in the firſt part of this eſſay; and we may further obſerve, that the virulence of putrid matter, which proceeds from animal bodies, riſes to a higher degree than that from vegetables.

The

The malignity of the moſt ſubtle putrid effluvia ſometimes produces, without mixing with the fluids, effects which are aſcribed to infection. This miſtake is chiefly owing to a perſuaſion, that air paſſes into the blood by the lungs in perſpiration, and putrid particles with it. Many great men have attempted to diſcover whether air does paſs into the blood, by the lungs, whoſe experiments have hitherto only ſerved to increaſe their doubts; but it is not to be doubted, that air may be ſo much impregnated with noxious matter, as to make impreſſions upon the veſicles of the lungs and cauſe ſuffocation. A variety of inſtances to this purpoſe might be produced; and there are alſo well atteſted facts of as fatal conſequences from the effluvia of the moſt odoriferous and aromatic bodies. *

It is of uſe in practice to obſerve, that ſome kind of matter lodged in the ſto-

* There is in the German tranſactions, an account of many perſons loſing their lives, by going into a room, that had been long ſhut up full of nutmegs, cloves and other ſpices, where the air was ſtrongly impregnated with their effluvia.

mach,

mach, inteſtines, &c. produces ſymptoms like what proceed from infection of the humours; but their vaniſhing immediately upon the removal of it, convinces us it was no more than a local vice.

Contagion, Malignity and Infection from Fermentation.

We have very amply treated upon theſe heads depending upon putrefaction, as it is the moſt common and formidable cauſe of the depravation of our humours; yet if we conſider the diſorders produced by fermentation, eſpecially in the ſtomach, we ſhall find, that like putrefaction, it is accompanied with contagion, malignity and infection. If acid juices remain in the ſtomach, they will communicate their own quality to the aliment we take, from whence may ariſe pain, wind, burning heat, &c. Eating much fruit in Autum, cauſes fevers, diarrhœas and many other diſeaſes, the general effects of vinous fermentation in the ſtomach; by which means the finer parts get into our veſſels, infect our fluids and then irritate the ſolids in various manners.

The

The acid and vinous fermentation ſeem leſs productive of infection than the rancid. There are many people who are habitually troubled with acidity in the ſtomach, without being otherwiſe ſenſible of any ill effect from it. And, drunkards, whoſe ſtomachs are often filled with wine, which turns acid there, without being followed by any remarkable diſorders in the animal œconomy; are ſufficient evidences of this fact.

The greater part of infants diſeaſes are ſuppoſed to proceed from acidities in the firſt paſſages; but may we not rather ſuſpect that they proceed from the oleaginous part of the milk become rancid? for experience evinces, that rancid fermentation, which oleaginous matter is very ſubject to, is extremely noxious in its conſequences.

The offenſive matter produced by acid or vinous fermentation is eaſily ſubdued by the organic powers, and ſeldom cauſes diſeaſes of long duration; except there be a ſuperabundance and conſtant ſupply of it. Acid and vinous liquors are agreable and

and beneficial to our natures, taken in moderation, to enable us to bear exerciſe, and to prevent the ſalts in our fluids from growing too alcaline: and in the heat of ſummer, for that reaſon, cider, limonade and ſuch acid liquors are proper. In ſome places butter-milk and whey are the chief drinks of the peaſants, in the ſummer-ſeaſon; or a ſort of cider made with wild apples, which is highly charged with an eſſential ſalt of the acid kind; and therefore a very good liquor to quench thirſt and check the rapid motion of the blood.

Matter become rancid by fermentation very pernicious.

Rancid matter is of a very ill character; for the fatty or oleaginous part of it prevailing over the acid ſalt, it can't be diſunited, conſequently is more diſpoſed to putrefaction than to fermentation.

Let not this tedious relation of circumſtances and events be wondered at; for the more we ſearch into nature and endeavour to inſtruct ourſelves in the theory and practice of phyſic and ſurgery, the more ſhall we be ſenſible of the utility of theſe diſcoveries, and of our own deficiencies.

The

Cauſes of ſpontaneous motions.

The principal cauſes of ſpontaneous motion are reducible to reſt, humidity, air and heat.

Reſt and motion both tend to produce ſpontaneous motions.

Every one knows from his own experience and obſervation, that ſtagnation of the fluids promotes putrefaction; and 'tis as certain that they are diſpoſed to it in proportion to their alcaleſcence, acquired by the action of the veſſels before ſtagnation.

Humidity neceſſary to ſpontaneous motions.

Water is the inſtrument which acts immediately upon bodies inclined to ferment or corrupt; it readily enters their moleculæ and diſunites them according to it's degree of heat. Evaporate all the humidity of any body and it will then neither ferment nor putrify; for which reaſon our humours ſtagnated and indurated, or our ſolids dried, do not ſuffer putrefaction; and dry gangrenes remain a long while, without diſſolution of the parts.

External humidity neceſſary to ſpontaneous motion.

But beſides the neceſſary humidity in every body to render it ſuſceptible of inteſtine motion, there muſt alſo be an external humidity diffuſed in the air to excite it;

it; but as we ſhall be obliged to ſpeak to this point afterwards, we ſhall ſay no more of it now.

It appears that ſalts are relative to putrefaction, as oil or ſulphur is to burning; for bodies cannot burn without the one, nor corrupt without the other. This point of philoſophy is indeed difficult to comprehend; for when we ſee that ſalts preſerve the moſt corruptible bodies, how ſhall we reconcile this ſeeming contrariety of properties in them?

Some bodies become incorruptible, when deprived of their ſalts, as the ſkins of animals when made into leather. The elementary parts being diſunited by water, diſpoſe bodies to putrefaction; conſequently, the ſtronger their union the leſs corruptible. It requires a great quantity of water to deſtroy a very ſmall portion of eſſential animal ſalt; and poſſibly this is partly the reaſon, that living bodies do not corrupt; though they contain but a very ſmall quantity of this ſalt in proportion to the aqueous parts. We find acid

ſalts are powerful antiſeptics; on the contrary thoſe of a volatile, alcaline nature, render bodies in which they are contained very apt to putrefy. Upon thoſe principles we ſeem to act rationally in the uſe of ſal ammon. marin. nitr. alum, &c. to ſtop the progreſs of gangrenes.

The eſſential ſalts in juices, diſpoſed to turn acid, and being enveloped in the oleaginous parts that the aqueous cannot diſſolve them, a fermentation is raiſed, which gives the rancid ſmell to oil, &c.

Air neceſſary to ſpontaneous motion.

The external air conſpires with what is contained in bodies, to raiſe ſpontaneous motions, which are obſerved to be in proportion to it's warmth and moiſture.

A warm and moiſt air moſt putrefactive.

The bad diſpoſitions of the air were attended to by the ancients. Experience taught them that warm winds and ſhowers, thunder and lightning were prejudicial to wounds. Parey inveighs againſt the ſurgeons of his time, for not obſerving that heat and humidity of the air ſometimes cauſed gangrenes in wounds.

Expe-

Experience, ſays he, affords us a very familiar example of the effects of ſuch a ſtate of the air, which is, that when the wind blows from the ſouth, attended with moiſture, meat will often decay in a few hours.

Two kinds of putrefaction.

Without the acceſs of external air, bodies will not eaſily fall into ſpontaneous motions, and they will prove but imperfect. Hence the ancients diſtinguiſhed between perfect and imperfect putrefaction.

Without external air, putrefaction generally imperfect.

They produce as an example of imperfect putrefaction, the putrid diſpoſition, with which the humours are ſometimes affected. They had obſerved that when excluded from the external air they did not manifeſt putrefaction by ill ſmell, as when expoſed to it; and being void of that, they looked upon them not ſo virulent. There are inſtances of children being born alive, and without any appearance of having ſuffered, by the corrupt membranes that enveloped them in the uterus*; or by

* Buchner miſcel. phyſico-med. pag. 64.

other putrid ſubſtances accompanying them *.

Facts which ſeem to contradict this.

Facts nevertheleſs ſeem to be contradictory upon this head; for urine has been known to corrupt in the bladder, become fetid and malignant. Matter concealed internally in an abſceſs has contracted a violent ſtink, and a malignity to ſuch a degree as to kill ſuddenly. Blood extravaſated has grown putrid in a ſhort time, and affected the cavity which contained it; yet there are caſes where the blood has remained a long time in its natural ſtate. M. de la Motte ſpeaks of a lady at Caen, who had an oblong tumor upon her elbow, occaſioned by a contuſion with the wheel of a coach, which contained extravaſated blood, in its natural colour and fluidity when it was opened a long time after.

The effects of putrefaction appearing in extravaſations of blood.

The effect of extravaſated blood is frequently confined to ſimple irritation, a long while after the extravaſation. The

* Schenkius lib. 1. Obſ. 3.

ſame

ſame author we juſt now cited, mentions a caſe, where the parts were ſo roughly treated in delivery, that the ſides of the vagina, at its entrance, grew together; and that, three months after, extreme pain ſeized thoſe parts, attended with convulſions. He immediately diſcovered the adheſion, and not doubting of the dreadful ſymptoms ariſing from a retention of the menſtrual diſcharges in the uterus, divided the adheſion and diſcharged a great quantity of thick, black blood, without ſmell, though it had been long retained, beginning to collect, in all probability, from the firſt time her menſtrual diſcharge ſhould have appeared after her delivery.

We find however that blood, under theſe circumſtaaces, is not always defended againſt the higheſt degree of corruption. In the Germ. Ephem. there is an obſervation of a girl aged 18, who had a tumor at the entrance of the vagina, which upon opening diſcharged much black, fetid blood. Benivenius mentions a ſimilar caſe, and ſays his patient had long been ſubject to periodical pains, returning vio-

lently and conſtantly every month, and that when he was called to her he diſcovered a membrane that cloſed up the entrance into the vagina; and upon dividing it, there iſſued out a great quantity of black matter, but he does not expreſly ſay it was offenſive in ſmell. Mekeren, who takes notice of a caſe of this nature, ſays the blood had an ill ſmell, and that the colour and conſiſtence of it was like rotten liver. Aquapendente ſpeaks of a girl, who began to be indiſpoſed at 13 years of age, grew worſe gradually, fell into a fever, loſt her appetite, became reſtleſs and delirious, ſhrunk and complained of violent pains upon the regions of the loins and uterus; many of which ſymptoms were aggravated every month, during a few days. He found at the entrance of the vagina a hard painful tumor which he opened, and diſcharg'd much black, glutinous, fetid blood.

Blood does not eaſily corrupt without external air.

Many experiments have been made, which prove indiſputably, that blood not expoſed to the air, will be long preſerved from putrefaction. Boyle put ſome into

a receiver, and afterwards exhauſting all the air, it remained there many months without alteration. He tied a large artery in two places, and the blood contained between the ligatures was long preſerved from corruption. He alſo filled a bottle with blood and corked it up cloſe, with the ſame effect.

Why bodies not expoſed to the external air ſometimes do, and ſometimes do not corrupt, &c.

Theſe obſervations and experiments prove, that blood does ſometimes corrupt without external air and ſometimes not, or but very ſlowly, which may be reconciled by other experiments. Papin, and many other philoſophers, have obſerved, that for want of external air, the internal in bodies diſpoſed to ferment or putrify may be ſufficient to excite inteſtine motion: and if all the air be exhauſted out of the veſſel before they be put in, they will, by degrees, furniſh from themſelves enough to ſerve this purpoſe; but then, if the air be exhauſted as it eſcapes from them, they may be preſerved from corruption, as long as the external air be excluded.

We learn from theſe experiments, that without air there can be no inteſtine motion, conſequently no putrefaction; which will enable us the better to account for many appearances.

The fleſhy parts will readily dilate, as the air expands the extravaſated blood contained in them; and, after being liquified by inteſtine motion, ſome of it may return from whence it came, and then, according to the concurrence of other circumſtances, produce diſorders in the animal œconomy. The like accidents may happen to any other kind of fluid when extravaſated, or to matter in an abſceſs.

The moſt corruptible body confined ſo cloſe as not eaſily to admit of the action of the internal air and to exclude the external, will corrupt ſlowly. There might be many inſtances produced of this kind of putrefaction, but none ſeem more to the point, than the corruption of the fœtus in the uterus, as mentioned in Hildanus and many other eminent writers.

It

It is chiefly by ill ſmell, that we diſtinguiſh perfect from imperfect putrefaction in bodies, which taint the air with their poiſonous exhalations; but we often breath in infected air, without being ſenſible of any bad conſequences.

An ill ſmell diſtinguiſhes perfect from imperfect putrefaction.

This circumſtance ſeems to favour the opinion of thoſe who think it is by deglutition and not by inſpiration, that malignant effluvia are admitted into the blood; which well accounts for our being often in infectious places, without receiving any infection.

It is more probable that we receive infection by deglutition than by inſpiration.

There are numberleſs inſtances to prove, that an offenſive ſmell is not always enough to advertiſe people, who happen to be in infected places, of the danger they are in from putrid effluvia: and the plague has been known to ariſe from what only produced a fulſome ſmell, according to Monſ. Tillon's account of his voyage to the Levant.

The air may be infectious without being diſcovered to be ſo by ill ſmell.

The interpoſition of air is not leſs neceſſary to fermentation than to putrefaction

Air neceſſary to fermentation

as well as to putrefaction.

tion, and cannot be perfect without; but nothing happens in our fluids, whilſt circulating in their veſſels, like the fermentation of vegetable juices. In ſome animal juices, particularly the adipoſe, there is a ſlow, obſcure and imperfect fermentation, which happens in ſteatomatous tumours, and ſome others by congeſtion *.

Of Heat neceſſary to ſpontaneous Motions, which corrupt our Humours.

Heat excites ſpontaneous motions.

Heat is the firſt cauſe of all motion in bodies; water and air, as we have already obſerved, are only inſtruments operating by heat. It is by heat reſiding in the circumambient air, that theſe motions are produced in bodies, which cauſe fermentation and putrefaction. Internal air alone produces them imperfectly; but both muſt coincide with heat to cauſe either perfectly.

Heat ſeems to act alone

In ſome caſes it ſeems as if imperfect ſpontaneous motion was excited by heat

* Plater. Obs. Lib. 3.

alone.

alone. It is well known that when perfect putrefaction poſſeſſes a dead body, there appears firſt a kind of general emphyſema, by the agitation of the internal air, which is never ſeen in the imperfect. A child, for example, who dies in its mother's womb, and is there ſeized with putrefaction, does not diſcover this emphyſema; but its ſkin is ſhrivelled, by which it appears pretty plainly, that the internal air is rather condenſed than rarified.

ſometimes in imperfect ſpontaneous motion.

It may not be altogether impertinent here, to make a ſhort remark upon windy indigeſtion. It does not ſeem likely, that the cauſes of digeſtion ſhould extend their effects ſo far as to move and diſengage the air contained in the aliment, and cauſe ſpontaneous motion productive of putrefaction; but there generally are very evident ſigns of fermentation, from whence wind may ariſe.

A remark upon windy indigeſtion.

Perfect ſpontaneous motion, eſpecially in putrefaction, when it gives us a ſenſation of heat within us, we muſt not confound with that which the motion of the arte-

Difference between natural and adventitious heat.

arteries produces in the blood, and diffuſes all over the body. The ancients carefully attended to this point, as we have mentioned before, and diſtinguiſhed the one by the name of natural, and the other by that of adventitious heat. They obſerved with great exactneſs the effects they produced conjunctly in certain caſes, and they almoſt always looked upon theſe effects as a kind of concoctions, which theſe different heats produced in the matter they acted upon. For example, they ranked among concoctions, the digeſtion of the aliment in the ſtomach, the formation of the matter in an abſceſs, &c. Theſe diligent obſervers of nature always looked upon concoction to be well performed, when the natural heat prevailed over the adventitious.

The doctrine of the ancients concerning heat in our bodies, as exact as that of the moderns.

Although this doctrine of the ancients founded upon obſervation only, is rather obſcure, yet it is not leſs true nor exact than that of the moderns. The method they took could conduct them no farther in the knowledge of cauſes than from effects; confining themſelves to obſervation, they

they never attempt to penetrate the ſecrets of nature. Philoſophical experiments, applicable to phyſic and ſurgery, they were ſtrangers to, and had it not been for the academic ſociety inſtituted in the laſt century, to which the members of it applied themſelves with great aſſiduity, their uſe might ſtill have been unknown to us. As experimental philoſophy is ſometimes neceſſary to be joined to obſervation, to elucidate our inquiries, the greater commendation is due to the firſt maſters of the medical art, for ſhewing how the want of it may be ſo well ſupplied, by diligently watching nature's ſteps, in all diſeaſes. Experiments require to be made with great judgment and accuracy, and to be well conſidered and adapted to the ſubject; otherwiſe inſtead of illuſtrating it, they may perplex and confound us. The ignorance of the ancients in experimental philoſophy was leſs diſadvantageous to them, in their phyſical inquiries, than the raſh conduct of the moderns, who made little uſe either of it or obſervation, and thought they might arrive at the art of healing, as an abſtract ſcience; it is not there-

therefore at all ſurprizing, that the ancients, who cloſely applied themſelves to obſervation and experience, conducted by their ſenſes, ſhould exceed the ſpeculative moderns in the knowledge of ſenſible cauſes, and the immediate and particular phænomena relating to the medical art. Let us examine the theory of the moderns upon the ſubject now under conſideration, and we ſhall find in their writings, only vague and ſuppoſititious cauſes; we ſhall obſerve that they have refined away their reaſon, and made an imaginary fermentation productive of effects depending upon natural and adventitious heat, by performing digeſtion, forming the different humours in our bodies, corrupting them, producing inflammations, fevers, &c. with an infinite variety of leavens to promote glandular ſecretions, &c. This contrariety of effects they abſurdly aſcribed to the ſame cauſe, which muſt afford curative indications as uncertain as the cauſe itſelf.

A moderate heat, with moiſture will generally prove moſt putrefactive; for when heat

heat is to an intenſe degree, the humid vapours in the air may be diſſipated by it, and the body grow dry rather than putrid.

But when, independent of theſe vapours, the air is charged with aqueous particles that the body cannot grow dry, by exceſſive heat, it will diſpoſe it to very quick putrefaction. *

Digeſtion is performed by a diſſolvent, aſſiſted by the action of the muſcles and natural heat; and adventitious heat ſhould not be intirely excluded a ſhare in this operation; for the ancients well obſerved, that the latter aſſiſted in macerating the aliment in the ſtomach, but that it was neceſſary to have it always in ſubjection to the natural heat. Conſidering theſe circumſtances, the reaſon will appear pretty evident, how warm water drank, a little at a time, after eating, when we find a diſagreable ſenſation of heat in the ſtomach, attended with eructations, may give relief and forward digeſtion.

* Boerhaave's Chemiſtry.

A body over-flowed with water, or in a very dry air, will not be corrupted by heat, but on the contrary, in ſome caſes, it will reſiſt putrefaction, and put ſome juices ſuſceptible of it out of the ſtate of corrupting, eſpecially thoſe which harden eaſily by boiling. Fleſh that is full of albuminous juices will remain incorrupted a long while after being boiled. The liver which is very full of blood, and one of the moſt corruptible viſcera, may be preſerved from putrefaction many years by boiling. Riolanus ſays, that a boiled liver which he left in the phyſic-ſchools was found there a year after incorrupted.

This antiputreſcent ſtate which fleſh acquires by boiling, eaſily makes us comprehend why raw fleſh does corrupt in the ſtomach of thoſe not accuſtomed to eat it, and why when boiled it does not. It is related that the famous Emard Rancormet deſtroyed himſelf in priſon, by eating raw beef, which he bribed the keeper to give him.

Boiled fleſh does not reſiſt fermentation ſo much as it does putrefaction; for in a few days it will begin to ſmell ſour. The gelatinous juices it contains are much inclined to acid fermentation, and by that diſpoſition in digeſtion oppoſes the putrefaction of what is too much inclined to it.

Boiling fleſh does not prevent fermentation in the gelatinous juices.

Adipoſe juices are not exempted from fermentation by boiling, nor from becoming rancid in the ſtomach, as evidently appears by nidorous eructations; therefore great care is required in preparing all the aliment, in which they abound, and the greater the degree of heat they undergo, ſo much the more inoffenſive they will prove.

In cooking fleſh in which there is a plenty of adipoſe juices, great heat is required to make it inoffenſive to the ſtomach.

SECT. III.

The ſpontaneous Motions belonging to each of our Humours.

EVERY juice left to itſelf is ſuſceptible of an inteſtine motion, but we ſhall confine ourſelves to animal juices.

Depravation of the chylous gelatinous and adipoſe Juices.

Of all the juices which compoſe the maſs of blood, we ſee only the chylous, gelatinous and adipoſe, that diſcover fermentation by an acid or rancid acrimony, and they appear to be ſubject only to theſe two kinds.

Acid fermentation often diſcovers itſelf by the ſmell proceeding from it: and there are many caſes, in which we may perceive it within us. Sucking children commonly ſmell ſour, though they be kept neat and clean; as do the greater part of ani-

animals of the brute-creation, whilſt they ſuck; for milk is very much diſpoſed to acid fermentation, as are gelatinous juices when ſeparated from others; but we propoſe here only to inquire in what caſes theſe juices ſhew evident ſigns of fermentation when mixt with others.

The ſour ſweats ſometimes taken notice of in adults, that may make us imagine our humours are full of acids, I believe are owing to ſome parts of the chylous juice expelled with the excrementitious, and ſoon fermenting: and from the continual renovation of our juices a great part of the eſſential ſalt of them may be of the aceſcent kind, which will alcalize by diſtillation, when expoſed to a certain degree of heat; and poſſibly ſuch a change may happen to it in our veſſels.

Animal juices ſubject to fermentation when extravaſated, ſoon grow putrid, as I have often obſerved in ſcarifications of anaſarcous ſwellings.

We have attributed to fermentation the rancid acrimony that the oleaginous part of the chyle contracts; the character of which we may be eaſily convinced, though no acidity be diſcoverable in its taſte; for both the acid and rancid acrimony produce a green ruſt upon braſs, and the alcaline a blue.

The characteriſtic of rancid and acid acrimony

Fermentation produces nothing ſo active and noxious as the rancid acrimony, when arrived to its higheſt degree. We may in ſome meaſure judge of it by the diſagreable impreſſion rancid butter, fat or oil makes upon the palate and throat.

Rancid acrimony the moſt noxious that fermentation produces.

Though there is nothing more to be dreaded than rancid acrimonies proceeding from adipoſe juices, yet they are not ſo diſcoverable within us as the acid; but they often appear by the matter in abſceſſes.

Acrimony from adipoſe juices very noxious.

Theſe, and other juices mixed together, may ſtagnate a long time in parts inacceſſible to the external air, as in thoſe commonly

The cauſe of tumors by congeſtion or cold tumors.

monly denominated cold tumors; and undergo an imperfect fermentation, which at length ends in a kind of putrefaction, but not of a virulent nature.

Depravation of the Blood and Lymph.

The craſſamentum of the blood coagulates when the ſerum leaves it, and it ceaſes to circulate. If it be expoſed to the air, thus coagulated and deprived of its vehicle, it becomes liquid, fetid and volatile, and then the whole evaporates, except a little groſs, terrene ſubſtance. We obſerve the ſame in the other juices; except the chylous, gelatinous and adipoſe. Lymph, bile, &c. are ſubject to an inteſtine motion which produces putrefaction in them as well as in the blood.

The ſpontaneous motion of the blood ends in putrefaction.

We have before ſhewn that blood does not quickly putrefy, when extravaſated in a part well defended againſt the attack of external air, and without much room for the internal to expand; but tis very apt to putrify under the cranium, in the thorax and abdomen, yet, even in theſe caſes,

if the ſerum be drained off, it corrupts the ſlower.

The effects of putrefaction of the blood.

Though the blood is not ſubject to perfect putrefaction but by the interpoſition of the air, ſtill it may, by ſtagnating in a part excluded from the external air, arrive, in time, to a great degree of corruption, extending to the diſſolution of it. Of this we have frequent examples in the ſcurvy, by its being rendered ſo fluid and acrimonious as to produce mortal hæmorrhages. We alſo ſee, in ſome gangrenes from internal cauſes, the blood ſo diſſolved, that, upon the ſlighteſt ſcarifications, dangerous hæmorrhages enſue. But I rather believe this general diſſolution proceeds from a reflux of the blood, that has ſuffered ſuch an alteration; where the action of the veſſels accompliſhes the perverſion, or renders it active enough to cauſe a diſſolution of the whole maſs.

Different degrees of imperfect putrefaction of the blood.

Blood, by its ſtagnation, gradually arrives at the higheſt degree of imperfect putrefaction, and produces various diſorders in the animal œconomy. When retained

in

in the hæmorrhoidal veins, beſides the pain and other local inconveniences, it ſoon affects the health of the body; though but little taken notice of at firſt, it afterwards creates great diſorders both in the body and mind, which generally vaniſh upon the return of the wonted evacuation of blood from thence.

When blood ſtagnates long in the ſpleen or vena portarum, it cauſes melancholic or hypochondriac affections, and irritations accompanied with a variety of ſymptoms, commonly more frightful than dangerous; but what moſt ſtrongly proves, that the blood acquires a conſiderable degree of acrimony by its ſtagnation, are the wandering pains which hypochondriacs ſometimes ſuffer, much like thoſe of ſcorbutics, whoſe blood is affected with ſome virus.

The different ſtate of the blood in ecchymoſes.

Blood extravaſated in contuſions, is not always attended with the ſame conſequences; for, if its natural fluidity can be preſerved, it may be reſorbed; but if it collects and coagulates 'tis not capable of re-

ſorption, yet it may remain a long while in this inſpiſſated ſtate; after which, whether by injuring the parts where lodged, as an extraneous body, and keeping open an internal wound, or by irritating the parts by its acquired acrimony, or whether theſe cauſes act in conjunction, an inflammation, ſooner or later, follows, attended with ſuppuration or gangrene; though the blood itſelf is not convertible into pus.

Blood extravaſated upon membranous parts cannot be reabſorbed.

We often find extravaſations of blood in a fluid ſtate, that will not admit of reſorption, which chiefly happens when lodged upon membranous parts, not furniſhed with veſſels for that purpoſe, but being affected with the leaſt ſtimulus, inflammations ſoon follow, which accelerate putrefaction by increaſe of heat, and theſe caſes generally terminate in gangrenes, if upon the dura-mater, the diaphragm, &c.

The diſeaſes it there produces

Stagnated blood aſſumes different

Blood aſſumes different forms, according to the part in which it ſtagnates. If in the heart or in aneuriſms, where it is continually

tinually expoſed to the pulſation of the arteries, it acquires polypus-like concretions. If it ſtops in parts but little acted upon, as in the veins in varices, or in the ſpleen, it is of a black colour, and of the conſiſtence of a ſoft, glutinous liniment.

forms in different parts.

The ancients often took blood under this appearance, when found in the ſpleen or in varicous dilatations of the vena portarum, or when evacuated by ſtool, for an atrabilious humour. This miſtake, evident in many of their obſervations, appears to be the ſource of ſome errors in their practice.

Blood found in this ſtate in the ſpleen and vena porta, taken by the ancients, for an atrabilious humour.

Coagulums of blood are at firſt hardiſh, tenacious and elaſtic, particularly obſervable in hæmorrhoidal and uterine extravaſations, and in thoſe under the cranium, but they ſoon loſe that form and are liquified; except thoſe formed in the heart and in aneuriſms, or in veins which receive ſome impreſſion from the impelling force of the arteries that accompany them.

The condition that coagulums of blood appear in at firſt.

Lymph

Lymph how ſubject to depravation.

Lymph being pretty much of the nature of blood, muſt be alſo ſubject to putrefaction; and we might be inclined to think it more ſo, did we only conſider it as the moſt elaborated of our humours; but elaboration alone is not ſufficient to diſpoſe the humours to corruption, they muſt be furniſhed with ſalts alcalized and ſulphur volatilized; and theſe conditions are deficient in the lymph: for elaboration fixes the ſulphur and fits it to envelope the ſalts by its tenacity. Beſides, the great proportion of aqueous parts in this fluid, tends much to abate the activity of the ſalts; and probably theſe are the reaſons of its remaining long in an aſcites, without undergoing ſuch an alteration.

Depravation of the lymph.

Though the lymph be not very ſubject to putrefaction, eſpecially where it is not expoſed to the acceſs of the air, yet it may, by long ſtagnation in tumors, acquire the higheſt degree of virulence; as will be evinced preſently.

That we may not be led away by conjectures, we ſhall have recourſe to obſervations,

vations, which may enable us to diſtinguiſh lymphatic from other tumors.

The vaſcular and cellular membranes are found in two conditions; and lymphatic, like other inciſted tumors, are ſometimes formed by their gradual extenſion to an exceſſive degree, without their elaſticity being deſtroyed; or the fluid contained in them, remaining in a ſtate of perfect ſtagnation; of which there is a moſt extraordinary caſe recorded in the Germ. Ephem.

An obſervation of a lymphatic tumor.

The following obſervation informs us, that the lymph is ſuſceptible of a very pernicious depravation. A young lady had an indolent, hard, moveable tumor upon her arm, which gradually grew, in about ſeven years, to the ſize of an hen's-egg, then became intolerably painful, and had a cancerous aſpect. Monſ. Petit, a moſt judicious ſurgeon, was of opinion that there was no reſource againſt the malignant nature of it, but extirpation: and the patient readily conſenting to it, he performed the operation ſoon after. He obſerved,

ſerved, after having made the inciſion through the ſkin and membrana cellularis, that the cyſt of the tumor entered between the aponeuroſes of the muſcles, which he ſeparated with his fingers from the parts it adhered to, but it was ſo confounded with the tendon of the muſculus palmaris, that he was under a neceſſity of dividing it. This was a lymphatic tumor, vaſcular and veſicular in it's ſubſtance, which reſembled an unripe peach when cut. ——In tumors of this kind, I have ſometimes obſerved, in little cavities, an aqueous ſeroſity quite different from lymph.

Pain not always anſwerable to the degree of depravation of the fluids in inciſted tumors.

It is highly probable that the pain in cancerous, or other inciſted tumors, depends upon the irritation of the depraved fluid, in contact with the cyſt; but though we are by it informed of the depravation of the ſtagnated lymph, yet when the ſtagnation happens near the center of the tumor, it may be corrupted to a high degree, before the depravation of the fluid manifeſts itſelf by ſuch an effect; becauſe the weak texture of the interior part is more liable

liable to be deſtroyed or mortified, than to have ſuch an acute ſenſation of pain excited in it: therefore the degree of pain in theſe tumors cannot always determine the degree of depravation of the fluid in them.

Another obſervation of a lymphatic tumor.

Monſ. de la Peyronie communicated an obſervation to the ſociety, which ſupports this conjecture. A woman found a ſmall hard moveable tumor in the middle of her breaſt, without having received any external injury, that ſhe was ſenſible of. It made a ſwift progreſs to an uncommon ſize, and Monſ. Blanchard a ſworn ſurgeon at Paris adviſed the extirpation of it, as the only means of preſerving her life: the operation was performed by Monſ. Peyronie, who neglected nothing afterwards to diſcover the nature of the diſeaſe. He diſſected the tumor in the preſence of many ſurgeons, which was of a livid color, ſoft, putrid and gangrened. In the circumference of the cyſt near the putrid parts, there were many reddiſh ſpots, which ſhewed as if an inflammation preceded the gangrene, occaſioned by the acri-

acrimony of the corrupt fluid. He threw ſome ſlices of the ſubſtance of the tumor into boiling water, which ſoon became hard and of the colour of horn.

Another obſervation of a lymphatic tumor complicated with anaqueous ſeroſity.

Monſ. Bouguet the younger, aſſiſtant ſurgeon to the hoſpital of invalids, communicated an obſervation of a tumor, which poſſeſſed the whole thigh. He thought he was ſenſible of a fluctuation of a fluid upon its ſuperior and exterior part, which depended, as appeared by opening it after the death of the patient, upon a very limpid fluid, without any ill ſmell, contained in a large cavity, the inſide of which was very ſmooth. He poured ſome of it into boiling water, which did not harden as lymph does. What enlarged the other part of the thigh ſeemed to be pure lymph, inſpiſſated to the conſiſtence of ſuet, which would not eaſily yield to the fingers.

It would not be amiſs, en paſſant, to make ſome reflections upon the uſe of diſſolvents, which bold practitioners are apt to preſcribe too confidently, in theſe diſeaſes; but we ſhall only aſk theſe men, who

who determine ſo raſhly upon this important point, if they know any that will act upon the inſpiſſated lymph and reſolve it, eſpecially when fixt in veſſels where the elaſtic power is deſtroyed?

Lymph is not the primary cauſe of theſe tumors but ſome local vice.

The obſervations we have related evidently ſhew the gradations and changes the lymph paſſes through in theſe tumors, and the various ſymptoms it produces in them and in their cyſts; but we muſt diſtinguiſh between the primary and material cauſe of them. The lymph is viſibly the material, but the primary, efficient cauſe is generally a defect in the veſſels which interrupts the progreſſive motion of this fluid, either from an external or internal cauſe.

Nor is lymph to be ſuppoſed the cauſe of any other diſeaſe, except the foundation be firſt laid for the inſpiſſation or acrimony of it, by ſome local vice, obſtructing its circulation. Hence we may eaſily judge of the merit and ſolidity of the doctrine of thoſe who attribute the original cauſe of

the diſeaſe to inſpiſſation and acrimony, and practice accordingly.

Depravation of the Recrements and Excrements.

Recrementitious and excrementitious matter ſubject to putrefaction.

Almoſt all the humours that paſs for ſimple diſſolving recrements are formed of the bilious, more or leſs diluted and elaborated. Among which are the ſaliva, the diſſolvent ſerving to digeſtion and the pancreatic juice; and having but little bile in their compoſition are not much diſpoſed to putrefaction, though that is the only depravation they are ſpontaneouſly ſubject to.

Bile ſubject to putrefaction.

Bile is a diſſolvent the moſt ſaturated with ſaline-ſulphureous particles; which may incline us to think that the great diſpoſition in the liver to corrupt, depends chiefly upon this humour being ſecreted by it; yet we ſee it may remain a long while in the gall-bladder, without contracting any noxious quality; indeed there it receives an alteration to a high degree of bitterneſs; and there are ſome obſer-

obſervations which manifeſtly ſhew it capable of perfect putrefaction: we have a more common and deciſive proof of the diſpoſition of bile to corrupt, in the fœces; for the more they are charged with it, the more fetid they are, and when deprived of it they have very little ſmell, as in the jaundice. And bile is productive of a great variety of diſeaſes.

What goes under the denomination of vitriolic bile, and produces violent complaints in the ſtomach, &c. probably is a mixture of true bile and adipoſe juices, with ſome acid.

Urine and ſweat are excrements the moſt remarkably diſpoſed to putrefaction. They are the remains of fluids that have long undergone the action of the veſſels in circulation. Urine retained a few days in the bladder, corrupts, ſtinks and becomes exceſſively pernicious: it not only corrupts there, but when cloſe corked up in a bottle; which ſhews its great tendency to putrefaction.

Urine and ſweat very liable to putrefaction.

Sweat alſo ſoon grows putrid, as is evident by the offenſive ſmell it contracts, in the linnen worn next the ſkin, when the body is heated.

The mucous juices are leſs diſpoſed to either fermentation or putrefaction, and on that account better adapted to lubricate ſome parts, and defend others againſt acrimony.

Theſe inquiries ſufficiently prove ſpontaneous motions of our humours are reducible to fermentation and putrefaction; and that fermentation invading any one of them, except in the primæ viæ, ſoon diſappears, and is ſucceeded by putrefaction. They alſo diſcover a truth, which the ancients looked upon of great importance in ſurgery, that ſuppuration produced by adventitious heat was bad and putrid, as has been already mentioned.

PART III.

On the IMPERFECTION of the HUMOURS through a Defect in the Organic Powers, which may be reduced to theſe three Heads, Crudity, Perverſion, and a vicious Conſiſtence.

SECT. I.

Crudity of the Humours.

Crudity of the fluids depends upon debility of the ſolids.

IT depends upon a debility of the digeſtive faculty, and the organs deſtined to prepare the humours; conſequently it muſt happen when the organic powers are inſufficient to diſunite the aliment and elaborate the chyle, and to excite in the humours a neceſſary degree of heat for the concoction of ſome and the exaltation of others: and, at length, for expelling what

are ſuperfluous and excrementitious, by their proper emunctories.

The conſequences of a defect of acrimony in the diſſolving juices.

Under theſe circumſtances the neceſſary juices cannot arrive at a due degree of activity, for digeſtion and chylification; eſpecially for the diſſolution of the mucilaginous parts of our aliment; and thoſe parts loſing but little of their glutinous quality in digeſtion, crudities muſt paſs with the chyle into the blood.

Tenacity of the gelatinous juices.

Although there be a great tenacity in the gelatinous juices, they are plentifully ſupplied with aqueous parts, by which, and the aſſiſtance of natural heat, they are diſſolved, and rendered fluid enough to circulate in the various meandrous canals of the body.

From whence a ſuperabundance of ſeroſities proceeds.

The excrementitious juices neceſſary to be continually diſcharged, ſtimulate the emunctories proper for their expulſion, by their ſaline particles; but in caſe of crudity they are not ſufficiently diſengaged to anſwer theſe purpoſes; therefore it is chiefly through a defect of this ſtimulating

ing property that ſeroſities abound in the blood; which art muſt ſupply by various kinds of ſtimulants and evacuants. The want of activity in the diſſolvent in the ſtomach, and of the ſtimulus in the excrementitious juices, appear the principal cauſes of the deficiency in the excretion of the ſerous and viſcous liquors, which ſo manifeſtly abound in pituitous habits; where we alſo find the ſolids greatly relaxed, as a neceſſary conſequence.

There is a kind of glairy juice in the blood and lymph, that gives a proper conſiſtence to them, upon which depends the power of the veſſels: and we obſerve in caſes of crudity, that the blood cannot arrive at perfection, to perform the various operations of the animal œconomy; nature loſes her vigor, and both body and mind grow dull and inactive, as evidently appear in anaſarcous caſes.

SECT. II.

Perverſion of the Humours by the exceſſive Action of the Veſſels.

THE imperfection of the humours depending upon a debility in the elaſtic power of the ſolids, is not a degeneration of them ſo far as to render them abſolutely uſeleſs, for the purpoſes of the animal œconomy; but that which our humours contract by the exceſs of action of the ſolids is irreparable; and they are not only rendered uſeleſs, but ſoon become very prejudicial to health, if not expelled out of the body. Thoſe moſt liable to this perverſion, are the adipoſe, albuminous and ſaline, recrementitious and excrementitious juices.

Perverſion of the adipoſe juices.

We ſee the fat cannot reſiſt the power of a fever; it is ſoon diſſolved by it, and the body daily waſtes. We obſerve that a hectic fever, independent of a ſuppuration of the lungs, throws the patient into a ma-

raſmus,

raſmus, and that whilſt the fever continues he cannot recover his fat; deſtroying that ſubſtance, is one of the moſt remarkable effects of a fever; and probably the deep colour of the urine is partly owing to the diſſolution of it, in fevers. And, without doubt, the profuſe ſweats attending the paroxyſms depend, in a great meaſure, upon the perverted adipoſe juices; conſequently it muſt be of great importance to evacuate them regularly, without which they may become very injurious, and by falling upon any of the viſcera produce very dangerous diſorders.

Though theſe evacuations are very neceſſary, we muſt take care not to confound them with the morbific matter critically diſcharged in true continual fevers, which, as we are going to ſhow, admits not of expulſion, till ſufficiently prepared by concoction, to paſs off by urine or ſome other way: and if the fever terminates by a good concoction, the morbific matter, or rather what envelopes it, will ſeparate from the urine and fall to the bottom when cold. Thus we may eaſily diſtinguiſh the

urine, which depoſites a ſediment reſulting from well concocted matter, from that which is charged with adipoſe juices, continually diſſolving by the heat, making it high-coloured or turbid; and we muſt not be ſurprized at the continuance of the fever with ſuch kind of urine and ſweats, for they are not critical: nevertheleſs phyſicians ſhould carefully attend to the expulſion of theſe perverted juices; but purgatives are not, in general, indicated before concoction. The plentiful uſe of aperitive drinks, or what the ancients called detergents, are proper to determine theſe fœculencies to paſs off by urine or tranſpiration. Purgatives are adviſeable only when there is reaſon to ſuſpect that the ſtomach and inteſtines are burthened with offenſive matter; and ſhould then be of a gentle nature, whoſe action is confined to thoſe parts.

What evacuation fevers before concoction admit of.

Uſe of purgatives much limited in the crude ſtate of fevers.

Perverſion of the albuminous Juices.

The exceſſive vibration of the ſolids, cauſes ſucceſſively many different appearances in the albuminous juices. It firſt occa-

Changes which happen to the albuminous

occaſions a glairy diſſolution, ſoon followed by inſpiſſation, which is deſtroyed by a kind of purulent diſſolution. All theſe different ſtates and changes are obſervable in violent fevers of long duration.

juices by the exceſs of action in the ſolids.

The glairy or albuminous part of the blood, diſſolved in the beginning of a fever, is perceivable by an oleaginous appearance riſing upon the ſurface of the craſſamentum; afterwards, in proportion to the degree and duration of the fever, it is inſpiſſated, and there is a tough, coriaceous ſkin; which changes are viſible upon bleeding at different times of the diſeaſe; and depend upon the extraordinary action of the arteries: for blood, by beating, may be reduced to polypus-like concretions, which are formed in aneuriſms, and even in varices, ſubject to the pulſation of the arteries. Violent agitation is not abſolutely neceſſary to their formation; a moderate one long continued will produce the ſame effect. We plainly ſee they muſt be gradually formed in large old aneuriſms, by the great number of flakes that compoſe them; but what are ſometimes found in the

The glairy diſſolution.

the great arteries of thoſe who die in the height of violent, ardent or inflammatory fevers, muſt be by exceſſive action of thoſe veſſels.

Remarks upon polipus-like concretions found in opening dead bodies.

We ſhall here make ſome remarks, en paſſant, that in opening dead bodies we may not take hard, coriaceous coagulums of blood, formed after death by cold, and a ceſſation of motion, for polypuſes; for thoſe polypus-like concretions, upon examination, will be found like blood extracted in violent fevers and coagulated in the porringer, and 'tis not probable that ſuch concretions ſhould be formed in the veſſels, but under the above-mentioned circumſtances, notwithſtanding what ſome authors relate. *

Inſpiſſated bile ſometimes found upon opening bodies that die of fevers.

Some experiments have been made which prove, that bile, in its filtration by the liver, carries ſome of this glairy juice along with it; for which reaſon 'tis not to be wondered at, that the bile ſhould ſometimes be found like pitch, in thoſe who

* Diſſertatio de Generatione mortis in morbis, Hoffman, No. 16.

die

die of acute diſeaſes; but it would be very wrong to conſider the ſpiſſitude of it, as the cauſe, which is only the effect, of the diſeaſe. *

The purulent diſſolution of the glairy humour.

After a fever has continued a conſiderable time, we commonly ſee, upon bleeding, leſs of the coriaceous ſubſtance upon the ſurface of the blood: the blood, which at firſt adhered every where to the ſides of the porringer, with but little ſerum, now is changed in both theſe reſpects, and if the fever be come to a ſalutary criſis, the urine will have a ſediment reſembling purulent matter, in colour and conſiſtence; but if this matter does not go off by the urinary or ſome other ſecretory, depoſitions of matter will follow immediately, not like other purulent abſceſſes, viſibly preceded by inflammation; although we may conſider the fever as a general inflammation of the maſs of blood, anſwering the ſame end in the formation of matter, as a local inflammation.

* Diſſertatio de bile, medicina & veneno corporis. No. 34.

The

The matter we find in this kind of abſceſs, muſt in ſome reſpects, appear different from that which proceeds from a local inflammation; for reaſons of little conſequence to aſſign.

The difference between the conſiſtence of purulent matter in and out of the veſſels.

The conſiſtence and colour that purulent matter is apt to acquire, by ſtagnation, is proper to be conſidered, and we ought to have a quite different idea of its appearance in the veſſels; for we ſee it does not make the urine look thick when it paſſes, nor can it be diſcerned in it, only as it grows cold, conſequently it muſt be very fluid and limpid when circulating in our veſſels. This remark may extend to all excrementitious humours diſpoſed to inſpiſſation, and we cannot attend too much to it; for the conſiſtence they have upon expulſion, is continually ſeducing our judgment. If a perſon expectorates very viſcid, thick matter, we are eaſily deceived into a belief, that he abounds with ſuch humours; and ſuch prejudices may greatly miſlead us in practice.

The

The purulent humour as it proceeds from the veſſels is very different in its appearance, to that which goes under the denomination of pus found in abſceſſes; for the thick conſiſtence we ſee in it there, is only an accidental quality, owing to its ſtagnation and being mixed with other humours in the part where depoſited.

When the glairy or albuminous part of the blood is melted down, and concoction duly performed in fevers, the criſes appear in the urine, &c. and if the bile has been inſpiſſated, and retained by its great tenacity, it now flows freely and recovers its natural colour.

The doctrine of concoction and criſis founded upon obſervation.

Theſe circumſtances ſhould not eſcape the notice of practitioners in following nature's ſteps; for 'tis by diligent obſervation of the changes, which happen in acute diſeaſes, that the ancients learnt to diſtinguiſh their ſtates of crudity from thoſe of concoction, and to eſtabliſh accordingly certain rules to conduct them in the cure of fevers. Theſe rules were carefully attended to till towards the end of the laſt century,

century, when the practice of phyſic began to be ſubjected to, and embarraſſed by, hypothetical notions.

Thoſe who firſt gave themſelves up to vain ſpeculations, indeed paid ſome regard to antiquity, and to methods eſtabliſhed and confirmed by the experience of many ages; but at length, ſome practitioners of great character preferred what they called clear ideas, ſhining forth in the new ſyſtems, to obſcure doctrines and opinions hard to be reconciled, founded only upon obſervation. They imagined they ſhould be able to attack fevers in their firſt principles, and, by that means, obviate the conflict with nature, in which the victory or event is always precarious. Some had recourſe to ſpecifics, or ſalts of an oppoſite nature to thoſe ſuppoſed to cauſe the diſeaſe: others paying no regard to concoctions and criſes, founded their hopes upon evacuants, which did not eſcape the obſervation of former ages, but were then found not to be relied upon. *

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* Urinarum Inſpectio in Febribus præ cæteris quibuſcumque morbis plus habet certitudinis & maximi eſt uſus; hinc

The different Kinds of Fevers which terminate by Concoction, and the various Kinds of Concoction.

The excretion of the cauſe of the diſeaſe does not always appear abſolutely neceſſary to put a ſtop to fevers, but in caſes where the action of the veſſels, in concurrence with other aſſiſtance, cannot ſubdue or correct the morbific matter; yet modern practitioners, too much prejudiced againſt the doctrine of concoction, ſought not to diſcover or diſtinguiſh what would or would not ſubmit to the power of nature.

The difference between fevers cauſed by acid and alcaline ſalts.

We obſerve that all acid acrimony, at leaſt of the vegetable kind, does not generally keep the veſſels long in violent action,

hinc enim Ægri & Morbi ſtatus optime cognoſcuntur, & medicæ intentiones circa agenda melius diriguntur. Quoad directiones pharmaceuticas res in hoc ordine verſatur: in crebra urinæ inſpectione naturæ motum attendamus eidemque obſequamur, nec Catharſi, nec Diaphoreſi movendum, niſi Hypoſtaſis quædam in urinio coctione ſigna exhibeat. Willis de Febribus continuis.——Hoc opus coctionis ſolius eſt Naturæ, quam arte adjuvare non poſſumus, ſaltem impedimenta naturam gravantia removere valemus. Etmullerus de febribus.

but

but when it does, it is by converting the aceſcent into an alcaleſcent ſalt; and when that change happens, it may produce long and violent fevers, though before it cauſed only the febris ephemeris, or one of very ſhort duration.

The different terminations ofcontinual fevers.

There are three ways in which fevers terminate, that ariſe from an oily ſalt too much alcalized, or from ſome other cauſes unknown to us. The firſt of theſe terminations is obtained by the operation of nature, called concoction; and the fever ceaſes when that is compleated. The ſecond is brought about by a kind of putrid diſſolution, which we ſhall deſcribe preſently. In this caſe the fever does not diſappear all at once, as in the preceding, but gradually as the maſs of blood is depurated by the power of nature alone or aſſiſted by art. The third is made by a depoſition of the morbific matter upon ſome part, in an abſceſs or a gangrene.

The knowledge of theſe phyſical truths did not eſcape the penetration of the ancients; who believed that continual fevers

aroſe from putrid, and ſometimes from bilious matter rendered extremely active, by long retention. To the firſt they aſcribed putrid, and to the latter ardent fevers. And they looked upon ardent fevers moſt diſpoſed to terminate by concoction, which we muſt not expect to ſee in colliquative or malignant fevers. In the firſt, 'tis manifeſt that the cauſe acts more upon the fluids than upon the ſolids, and deſtroys the texture of the blood too much, for the action of the veſſels to produce, by a certain degree of concoction, the purulent humour neceſſary to envelope the febrile matter. In the ſecond, experience frequently informs us, that the putrid matter which cauſes ſuch a diſorder in the vital faculties, interrupts all the operations of nature too much to expect this ſalutary criſis, which is the reſult of a general, violent, and continued action of the arteries.

Colliquative and malignant fevers do not terminate by concoction.

Malignant fevers are frequently attended with deliriums, comas, convulſions, &c. ſuppoſed to enſue from inflammations of the brain; but I have inſpected the brain of many who died of this kind of fever,

under theſe dreadful nervous ſymptoms, without finding it inflamed.

If the operations of the animal œconomy be not too much embarraſſed in theſe complicated caſes, the fever may overcome the cauſe by concoction; but if that ſhould be prevented, the diſeaſe may then terminate by a depoſition of purulent matter, or perhaps by ſome purulent diſſolution, of which we ſhall ſpeak preſently.

We ſhall not here expatiate upon malignant fevers, and how they are complicated; for we are limited in this eſſay chiefly to what is chirurgical; and would not chooſe to ſay much more than is requiſite for the underſtanding of our ſubject.

The difference between remitting and continual fevers.

Remittents have exacerbations quickly ſucceeding each other, and may properly enough be termed falſe continual fevers; but they do not terminate by concoction like true continual fevers.

Sometimes it is difficult to

Sometimes ſuch exacerbations are joined to true continual fevers, and require to be par-

particularly conſidered. Theſe caſes are indeed very perplexing to thoſe who build their practice upon ſpeculative ſyſtems, more curious than uſeful; and nothing but obſervation can conduct them out of this labyrinth. The paroxyſms of periodical fevers are almoſt always preceded by ſome remarkable ſymptoms declaring the approach, as laſſitude, pains in different parts, ſhiverings and ſenſations of cold in the extremities, &c. and in their declenſion the urine generally depoſites a ſediment, though very different from what accompanies concoction in continual fevers. The increaſe of true continual fevers is not preceded by the above-mentioned ſymptoms, and upon the decreaſe the urine is commonly high-coloured, or turbid, and ſometimes it has a feculent ſediment; but frequently it has neither cloud nor ſediment before the diſeaſe comes to the criſis. * Thus the paroxyſm of remitting fevers may be diſtinguiſhed, by an able and experienced phyſician, from the increaſe in continual fevers.

diſtinguiſh remitting from continual fevers.

* Lommius Obſ. med. Lib. 1.

Sediment in urine of different kinds, in continual and periodical fevers.

The urine of perſons in fevers has two kinds of ſediment, the whitiſh or purulent which we have taken notice of, and the reddiſh, like grated brick; and generally this is the only kind obſerved in periodical fevers.

Difference between the matter depoſited, &c. which makes the volume of the tumor.

The morbific matter in abſceſſes, in conſequence of fevers, is too fine, and in too ſmall a quantity to add ſenſibly to the volume of the tumor it cauſes, by obſtructing the circulation of the fluids where it happens to take up its reſidence; and 'tis hard to form adequate ideas of it.

Internal depoſitions of matter are generally attended with a train of diſmal ſymptoms, more to be dreaded than the diſeaſes they proceeded from: and the moſt ſagacious phyſicians have yet been able to eſtabliſh only general rules to be obſerved, that cannot be relied upon with any certainty.

Abſceſſes are viſibly raiſed at once only by purulent matter, ſeparated from the blood after concoction in continual fevers, which being thrown upon ſome part raiſes

a tumor ſuddenly, without any appearance of inflammation at firſt.

In putrid colliquative fevers there will be a diſſolution of the corruptible humours but no concoction. When the putrefaction ariſes to the higheſt degree, ſometimes the patient will have a conſiderable burning heat upon the ſkin, the fever appearing very moderate in other reſpects; which heat ariſing from acrimony, may be increaſed according to the force and celerity of the blood. The cauſe of this putrid diſſolution ſeems to ſpare only the crude chylous juices, that probably reſiſt its power by a great quantity of aceſcent ſalts contained in them; a circumſtance that affords us uſeful hints in practice. Theſe fevers do not terminate upon this diſſolution, which appears by fetid evacuations by ſtool or ſweat, only gradually as the veſſels can ſeparate the morbific matter and recover their elaſticity.

The heat in putrid or eruptive fevers, which ſometimes gives the ſenſation of burning, like a cauſtic, in the parts, though

they be cold to the touch, is produced by acrimony; and it is very different to that proceeding from the action of the veſſels upon the blood, making the part ſenſibly hot to the hand, as in an inflammation. The one we may, probably call, la chaleur d' acrimonie, the heat of acrimony; the other la chaleur d' inflammation, the heat of inflammation: and 'tis a point of great conſideration in practice, to diſtinguiſh well the one from the other.

Gentle purging the beſt means of preventing depoſitions of matter, which this kind of fever threatens.

The life of the patient ſeems to depend upon the evacuation of the putrid humours fallen into diſſolution; and purging appears as neceſſary in theſe colliquative fevers, after the appearance of the diſſolution of the humours, as 'tis improper in ſimple continual fevers before concoction; * for though it may be ſometimes indicated in their beginning, 'tis only to empty the firſt paſſages, when we have reaſon to think corrupt matter is lodged there, and may prove injurious; but in putrid colliquative fevers we muſt conſider the

* Hippocrat. Aphor. 22 Sect. 1.

tendency of the vitiated humours to run off before concoction can be obtained. It is that orgaſm, which, according to Hippocrates, admits not of deferring purging even in the very beginning of continual fevers; * but indeed he obſerves that this ſpontaneous diſpoſition to purging rarely happens at that time. It is true the ſigns of colliquation, and the tendency the noxious humours have to be evacuated do not commonly appear at firſt, but it muſt be obſerved, that at whatever time they ſhew ſuch a propenſity, we muſt pay no regard to crudity or concoction, but attend to the dictates of nature, and have immediate recourſe to evacuants. When the patient begins to diſcharge by ſtool any fetid matter unprovoked, the indication for purging is evidently to be anſwered by injections, or the gentleſt purgatives, which demands attention throughout the courſe of the diſeaſe; for ſuch evacuants with antiputreſcents of a farinaceous, aceſcent kind, refrigerating ſalts, as nit. cryſt. min. &c. are remedies the moſt to be depended upon, in order to

* Hippocrat. Aphor. 10 Sect. 4.

obviate the fatal conſequences of depoſitions of matter greatly to be feared in fevers of this nature.

The depoſitions of the morbific matter in theſe fevers appear ſanious and corroſive. What happens frequently after the ſmall-pox and other contagious fevers, afford remarkable inſtances to this purpoſe, in which the bad character of the matter ſhould make ſurgeons attentive to diſcharge it as ſoon as the abſceſs appears; to prevent its injuring the parts by its corroſive quality. Sometimes it does not ſhew itſelf by an abſceſs, but cauſes a gangrene; then we muſt wait till all of it be tranſlated to the part, before we can expect, by any applications, a ſeparation of the dead from the living parts.

Some degree of acrimony neceſſary in recrements and excrements.

When we ſpoke of the crudity of the humours we obſerved, that it was by the action of the veſſels, recrements and excrements were brought into a proper condition to ſtimulate their reſpective ſecretories, by a gentle acrimony, for their expulſion.

In

In continual fevers the chylous juices paſs, in a ſhort time, through all the degrees of elaboration, and at length arrive at a vitiated, uſeleſs ſtate, and if they be not then evacuated, the blood will abound with them, and by violent agitation be ſtill more depraved.

The action of the veſſels produces in a ſhort time much excrementitious matter.

The evacuation of them therefore, in theſe fevers, is one of the principal objects to be always had in view. Bleeding moderates the exceſſive vibration of the veſſels, and diluents with refrigerants render the maſs of blood more aqueous, and reſiſt the perverſion of theſe juices; and, when of no farther uſe, aſſiſt nature in conveying them to, and expelling them by, their proper emunctories. The uſe of detergents, as the infuſion, decoction or juice of aperitive plants are very beneficial; for they gently ſtimulate the ſecretories to perform their functions, and procure a conſtant depuration of the blood without encreaſing the fever.

The evacuation of excrementitious matter muſt be attended to in fevers.

Excrementitious juices, by long retention, will become very acrid and injurious to

to the operations of the animal œconomy; and by too much ſtimulating the proper ſecretory organs, they may contract, and totally exclude them; then they cannot be expelled, unleſs ſome others, naturally leſs irritable, or better defended with mucus, will admit of their paſſage.

Habitual diſeaſes depend upon excrementitious matter that cannot be evacuated.

When excrementitious matter cannot be evacuated, or not intirely, becauſe the ſecretories are not able to bear the acrimony of it, we muſt uſe evacuants with great caution: and under theſe circumſtances the foundation of various diſeaſes of the ſolids are laid; as cacoethic ulcers, herpes, leproſy, rheumatiſm, gout, aſthma, &c. or fevers of various kinds.

If farther evidence be wanting of the exiſtence of theſe bad juices, and of their infecting the blood, let us conſider the conſequences of drying up an habitual ulcer, which often prove fatal to the patient.

Trituration of the humours an abſurd notion.

The changes we have obſerved, which happen in our humours, by the exceſſive elaboration and ſubaction of them, are enough

enough to explode the once famous ſyſtem of trituration. The authors of this ridiculous hypotheſis were extremely deluded by falſe ideas concerning breaking, grinding and levigating the humours, not conſidering that the action of the veſſels produces effects quite oppoſite to thoſe they aſcribed to trituration, which they imagined blunted the ſpicula of the ſalts of our humours, and rendered them inoffenſive to nature, when it increaſed their acrimony and activity; they alſo attributed to it, dividing and ſubtiliſing our juices, though it evidently makes them more tenacious, increaſing and hardening the moleculæ of them; for in the chyle they are not of the ſize they are in the blood. It is plain that thoſe who follow this opinion, depart from the way that leads to the knowledge of a moſt important truth. Indeed we have ſeen men of great abilities, and who have had the beſt opportunities of ſtudying nature, give themſelves up to ſuch abſurd opinions, and defend them with great zeal and erudition to the end of their days; therefore it is not to be wondered at, that ſyſtematical and ſpeculative theories ſhould prevail,

prevail, when advanced and maintained by men of diſtinguiſhed parts and learning.

Our humours may be too thin or too thick. We have already treated amply of their ſtate of crudity. The blood is impoveriſhed by hæmorrhages and other cauſes; but the total diſſolution of it is effected only by putrid matter.

We are acquainted with many kinds of ſalts and juices of plants, which, being mixed with it, as ſoon as extracted, prevent its coagulation, and keep it nearly in its natural fluidity, by which their uſefulneſs appear in medicine. Coagulation is prevented by hindering the approach and coheſion of its globules; but diſſolvents muſt act upon the globules and moleculæ of the blood and humours to deſtroy the natural conſiſtence of them.

Should I be aſked if I thought the materia medica could furniſh us with attenuating, inciding and diſſolving medicines? I muſt confeſs I ſhould anſwer rather negatively; for I do believe, that thoſe which

paſs

paſs under ſuch denominations, produce their effects upon the fluids, chiefly by ſtimulating the ſolids to action.

Spiſſitude of the blood and humours ſuppoſed to be the chief cauſe of diſeaſes by ſome phyſicians.

As the multiplicity of cauſes of diſeaſes, real and ſuppoſed, greatly perplexed and embarraſſed the practice of phyſic; ſome phyſicians, willing to reduce them to the utmoſt ſimplicity, looked upon ſpiſſitude of the blood and humours as the principal cauſe; yet this, upon ſtrict examination, I am perſuaded will appear to be raiſed upon but little better foundation than fermentation, trituration or acidity in the blood; and to be more frequently the effect than the cauſe of diſeaſes.

Want of heat and motion in our humours may produce ſuch a change, as appears in œdemas; in which caſes re-eſtabliſhing the elaſticity of the ſolids, and communicating warmth to the inert fluids, fuſing and putting them in a condition to be acted upon by that power, ſeems very rational practice.

Spiſſitude of the blood and

If the blood and humours have not the ſize of their globules and moleculæ altered by

humours do not increaſe the ſize of the globules and moleculæ.

by ſpiſſitude, yet they are by it rendered, more unfit to be propelled through the meandrous canals, by their contractile power; and the circulation of the blood will be farther obſtructed, if its globules are become ſo compact that their ſpherical figure will not readily yield to that power, which puſhes them forward into the capillary veſſels.

A great proportion of the albuminous juices, which require briſk agitation to preſerve in them a due fluidity, may cauſe an inſpiſſation of the blood in the vena portarum, &c. under a languid circulation, and lay the foundation of many complaints.

Cauſes of melancholic and hypochondriac diſeaſes.

A ſtudious and ſedentary life contributes very much to melancholic and hypochondriac diſorders; for inaction of the body and great attention of the mind retard the circulation of the blood exceedingly, and conſequently promote inſpiſſation. And we rarely obſerve that thoſe who labour hard, or uſe much exerciſe, are troubled with theſe complaints, which frequently reſiſt the power of medicine.

Steel

Steel affords the greateſt relief in theſe unhappy circumſtances, with moderate exerciſe on horſeback.

Spiſſitude of the humours has been deemed the cauſe of ſcirrhous tumors. The conſiſtence of the humours found in this kind of tumor favoured the belief of ſuch an opinion, and made the effect taken for the cauſe; an error very common in our art; but humours the moſt fluid when circulating in our veſſels, are found moſt apt to inſpiſſate when extravaſated; a circumſtance not enough attended to.

Spiſſitude of the humours has been deemed the cauſe of ſchirrous tumors.

We ſhall recapitulate in few words the different kinds of acrimony in our humours. Thoſe which depend upon fermentation are the acid and rancid, with their various combinations and tranſitions. And what proceed from putrefaction are alſo very much complicated. Both theſe ſtates of our humours have been ſo fully treated of, that it is unneceſſary to mention them again here more particularly.

F I N I S.